DOCUMENT RESUME

ED 225 439 HE 015 790

TITLE Dental Auxiliary Discipline Advisory Group Final Report. Kentucky Allied Health Project.
INSTITUTION Kentucky Council on Public Higher Education, Frankfort.
SPONS AGENCY Health Resources Administration (DHHS/PHS), Hyattsville, Md. Div. of Allied Health Professions..;
PUB DATE Jun 82
GRANT 5D12-AH-90062-03
NOTE 84p.; For related documents, see HE 015 788-793.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Advisory Committees; *Allied Health Occupations Education; *Articulation (Education); Career Ladders; College Planning; Cooperative Planning; *Dental Assistants; *Dental Hygienists; Dental Technicians; Employment Level; Health Services; Higher Education; Intercollegiate Cooperation; Occupational Mobility; Program Evaluation; *Statewide Planning; *Transfer Policy
IDENTIFIERS *Kentucky Allied Health Project

ABSTRACT

Education for the dental auxiliary professions in Kentucky and articulation within the field are examined, based on the Kentucky Allied Health Project (KAHP), which designed an articulated statewide system to promote entry and exit of personnel at a variety of educational levels. The KAHP model promotes articulation in learning, planning, and resource allocation. Dental auxiliary occupations include assistants, hygienists, laboratory technicians, and expanded duty staff. Information is provided on the history of these professions, educational programs, accreditation, and regulatory practices. The Dental Auxiliary Discipline Advisory Group (DAG): (1) developed a core curriculum to allow students to advance from dental assisting to dental hygiene; (2) developed an articulation model for advanced placement for students transferring into higher-level programs; (3) negotiated a transfer agreement between the five vocational-technical system dental assisting programs and the three community college system dental hygiene programs; (4) surveyed student interest in articulated programs; (5) designed a student information brochure; and (6) recommended developing competency assessment. Additional DAG recommendations and the use of Program Evaluation and Review Technique are addressed. The transfer agreement and maps of schools offering dental auxiliary programs are appended. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED225439

KENTUCKY ALLIED HEALTH PROJECT

DENTAL AUXILIARY

DISCIPLINE ADVISORY GROUP

FINAL REPORT

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Kentucky Council on H.E.

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

HE 015 490

Commonwealth of Kentucky
Council on Higher Education
Frankfort, Kentucky 40601

Harry M. Snyder
Executive Director

June, 1982

DENTAL AUXILIARY
DISCIPLINE ADVISORY GROUP MEMBERSHIP

Sandra Appling
Bowling Green State Vocational-Technical School

Jean Cain
Jefferson State Vocational-Technical School

Larry Chiswell
Lexington Technical Institute

John Fuhrmann
Lexington Technical Institute

Harold Holbrook
Morehead, Kentucky

Richard Kingston
University of Kentucky

Ruby F. Meador
Western Kentucky University

Darlene E. Novak
University of Louisville

Colleen O'Toole
Somerset Community College

Martha Rankin
Watterson College

Barbara J. Schnurr
University of Louisville

Eric Spohn
University of Kentucky

Vivian Whitehouse
Jefferson State Vocational-Technical School

CONSULTANT

Ms. Irene Woodall
Bala-Cynwyd, Pa.

ACKNOWLEDGEMENTS

While many individuals have contributed to the accomplishments of the Kentucky Allied Health Project, special thanks and recognition go to Joy M. Kirchner, and Joseph Hamburg, Dean, Allied Health Professions, University of Kentucky. Dr. Kirchner wrote the initial grant application while she was the Associate Director for Allied Health Education at the Council on Higher Education with the encouragement of Dr. Hamburg. Together their pragmatic but visionary planning laid the foundation for a statewide system of allied health education. We thank them.

A special word of thanks goes to Council staff members who helped make our work successful. We appreciate the support that the Executive Director, Harry M. Snyder gave to the project. The support given by Robert L. Barnett, Director of Policy Studies during the first two years of the project was invaluable. He guided the recruitment and hiring of project staff, oriented new staff, and assisted in providing information regarding policies and procedures that were essential to the initial planning of the project and its success. In addition, E. L. (Angie) Hebbeler, Director for Health Programs and Roy P. Peterson, Deputy Executive Director for Academic Affairs gave freely of their expertise and time. For the first two years of the project Gary G. Breegle was assistant project director. His guidance in planning, evaluation and research brought inestimable value to our efforts.

The Council's computer science staff also provided essential assistance. We appreciate the support of Michael R. Bailey, Linda P. Eldridge, Angela Mahoney and J. Kenneth Walker.

The reports could not have been prepared without the help of the Council's secretarial staff. In particular we are grateful to Darlene Blade, Teresa K. Kinne, and Ruth A. Taulbee for their patience and hardwork during the preparation of the reports. We also appreciate the secretarial assistance of Elaine F. Fultz, Diana Mangeot, Brenda Sageser, Shari Sullivan, Sandy K. Thurmond, Charlotte Vance and Sandy Waits.

We asked many others for their advice and counsel, and wish to recognize them for their contribution. They include the following: Wanda D. Bigham, Morehead State University; Ann S. Bisconti, American Society of Allied Health Professions; Keith D. Blayney, University of Alabama; Ralph Boatman, University of North Carolina; Frank G. Dickey, Chairman, National Commission on Allied Health Education; Marie C. Dietrich, New Jersey School of Allied Health Professions; Carley Dodd, Western Kentucky University; Richard J. Dowling, American Society of Allied Health Professions; Eleanor Gilpatrick, Hunter College; Robert Hutson, Quinnipiac College; Frank Kirk, International Technologies; Robert E. Kinsinger, W. K. Kellogg Foundation; William Knisely, Medical University of South Carolina; Craig Scanlan, Brookdale Community College; Dan Southern, Western Carolina University; Sharon Sweeting, Jackson Memorial Hospital; C. Kenneth Tanner, University of Tennessee; Robert Tomlinson, University of Illinois; and Irene Woodall, Bala-Cynwyd, Pennsylvania.

SUMMARY

The major goal of the Kentucky Allied Health Project was to design an articulated statewide system permitting entry and exit of prepared personnel at a variety of educational levels. Six disciplinary clusters were included in the project (1) dental auxiliaries, (2) clinical laboratory sciences, (3) dietetics/nutrition, (4) rehabilitation therapies, (5) radiological sciences, and (6) respiratory therapy.

Highlights of the accomplishments of the Dental Auxiliary Discipline Advisory Group include the following:

1. Development of a Dental Auxiliary Articulation Model. A theoretical articulation model was developed which illustrated the transfer options for on-the-job and formally trained dental auxiliaries.

2. Development of an "Ideal" Core Curriculum. A three-phased core curriculum was developed allowing students to advance from dental assisting, to expanded functions, to dental hygiene without repeating previously mastered content.

3. Negotiation of Transfer Agreements. The efforts of the Dental Auxiliary Discipline Advisory Group led to the development of a transfer agreement between the five Vocational-Technical System dental assisting programs and the three Community College System dental hygiene programs. Other potential future agreements were also identified.

4. Statewide Student Interest Survey. A survey to determine student interest in articulated programs indicated that 95 percent of the dental assisting and 100 percent of the EDDA students plan to continue their education.

5. Dental Auxiliary Education Brochure. A student brochure was designed to provide general information about dental auxiliary education, the system-wide transfer agreement and to assist faculty/counselors in student advisement.

6. Cored Courses. The University of Louisville's dental assisting and hygiene programs have cored Dental Anatomy and Radiography.

The Dental Auxiliary Discipline Advisory Group made the following recommendations for the future:

1. Develop articulation agreements between programs.

2. Establish standardized minimum levels of achievement for each module of instruction within programs.

3. Develop guidelines for the implementation of a variety of competency assessment mechanisms including standardized criteria for each mechanism.

4. Develop standardized assessment mechanisms according to the guidelines addressed in recommendation 3.

5. Establish a testing center for the administration of the standardized assessment mechanisms developed according to the above guidelines by discipline faculty.

6. Establish either:

   A. A system of credit hours (or comparable system) for the state vocational/technical schools or

   B. A mechanism for vocational/technical dental assisting graduates to be granted advanced placement in dental auxiliary and/or laboratory technology programs at other schools.

7. Develop mechanisms to facilitate additional academic achievement for dental assistants.

8. Eliminate differences in the terminal degree titles awarded by programs offering similar courses of study, i.e. certificates and diplomas; certificates and associate degrees.

9. Notify guidance counselors and prospective students via college bulletins, transfer guides, and/or institutional student information pamphlets of mechanisms available for obtaining credit and advanced placement for previous education and experience.

10. Identify teaching methodologies most appropriate for the mix of traditional and articulating students.

11. Investigate the need for and feasibility of remedial or transitional courses for articulating students.

12. Identify the appropriate number of contact hours for each content area based on teaching methodologies/learning strategies, accreditation standards, etc.

13. Standardize course titles.

14. Model curricular changes after the "ideal" core curriculum.

15. Continue to investigate valid predictors of success for dental auxiliary and dental laboratory technology programs.

16. Develop mechanisms for evaluating and revising the dental auxiliary articulation system.

17. The Council on Higher Education, or some other appropriate organization such as the Kentucky Consortium for Dental Auxiliary Education, should coordinate the statewide articulation activities and support the development of a grant proposal, or other mechanisms, to fund these activities.

TABLE OF CONTENTS

	Page
ADVISORY GROUP MEMBERSHIP	ii
ACKNOWLEDGEMENTS	iii
SUMMARY	iv
I. PROJECT OVERVIEW	1
Setting	1
Purpose	3
Significance	4
Organization	6
Approach to Leadership	13
II. DENTAL AUXILIARY EDUCATION	20
Discipline Advisory Group Statement of Philosophy	20
Definitions	21
Development of the Dental Auxiliary Professions	22
Education of Dental Auxiliaries	26
Accreditation	27
Regulatory Practices	28
Mobility and Articulation	29
Educational Challenges of Articulation	33
III. DISCIPLINE ADVISORY GROUP ACTIVITIES	38
Orientation Activities	38
Model Curriculum Activities	38
Negotiating the Transfer Agreements	39
IV. RESULTS	40
Articulated Curriculum Model	40
Articulation Model	42
Systemwide Articulation Agreement	44
Additional Accomplishments	46
Recommendations for Implementation	47
Summary and Implications	58
APPENDIX A Planning and Evaluation with PERT	62
APPENDIX B Dental Auxiliary Program Inventory	66
APPENDIX C Transfer Agreement	72

1 PROJECT OVERVIEW

Setting for the Project

The Kentucky Council on Higher Education, a statewide coordinating board, was awarded a grant in 1978 from the U.S. Department of Health and Human Services to develop a statewide system for allied health education. To adequately describe the development of KAHP, a brief description/definition of the purposes and functions of coordinating boards will be presented.

Kentucky Higher Education and Kentucky State Government are by necessity linked together, sometimes as adversaries, sometimes as partners. Sandwiched between the public colleges, universities and state government is the Kentucky Council on Higher Education, a statewide coordinating board.

The Council is one of the country's oldest higher education coordinating agencies (1934); however, until it was strengthened in 1966 and again in 1972, it had little authority with which to perform its coordinating responsibilities.

In the 1970's the Commonwealth, through the Council on Higher Education and with the full cooperation of the universities, took the initial steps toward the development of a system of higher education. A 1976 Council report, Kentucky and Comprehensive Planning for Higher Education, states:[1]

> Although Kentucky has a great variety of public institutions, they are not organized into a cooperative system through a coordinated balance of programs, through consideration of unnecessary duplication or overlapping responsibilities....

In 1977, the adoption of mission statements was aimed at organizing a system of higher education. The Council stated that the system was to promote "quality education and research, efficient use of resources, effective communications and smooth movement of students between institutions." The Kentucky Allied Health Project (KAHP) was conceived and designed as a sub-system within this total system. As a sub-system for allied health education, KAHP would strive for both efficient utilization of resources and the development of smooth movement of students between institutions.

The publication entitled "A System of Higher Education in Kentucky Including Mission Statements" presents several characteristics of this system.[2] Two characteristics which directly relate to the goals of the Kentucky Allied Health Project are:

1. "Centralized coordination of program offerings at all levels and among all institutions."
2. "Recognition of and program articulation with the vocational schools in implementing the 'career lattice' concept in post-secondary education."

For a statewide system of higher education to function smoothly, policy decisions must be made that support the characteristics of the system. Each institution must support the system's development. In a system of higher education, one of the central requirements is cooperation between and among institutions.

The Council's belief in and support of a higher education system provided the conceptual framework for KAHP. All curriculum decisions were entirely the responsibility of the cooperating faculty and institutions. In fact, because the Council views academic freedom as a universal and

absolute concept, the success or failure of KAHP was directly related to the institutional faculties. These faculties had to support the philosophy of articulation, be willing to engage in curriculum experimentation and to not only consider the needs of their respective institutions but the needs of the state as a whole. Some faculties did this with great success and a sense of commitment to students from all levels of higher education and all types or institutions (i.e., vocational, private, public, and proprietary); other faculties clung to professional and personal vested interests and were unable to respond to state and/or institutional needs.

The Council's willingness to respect and recognize the claims of academic freedom and procedural autonomy and the institution's equal willingness to recognize the state's right to participate in statewide planning for allied health education contributed to some of KAHP's success. These cooperative attitudes resulted from the fact that the formal structure brought the institutions and the Council together as partners in a joint venture firmly believing in shared group decision making and leadership.

Purpose of the Project

The purpose of the Kentucky Allied Health Project (KAHP) is to use the resources available to develop and implement a model articulated system of allied health education. The articulated system is viewed in the broadest sense to include articulation in learning (i.e., plans to permit a smooth transition from one education level to another) and articulation in educational planning and resource utilization. There are currently 105 allied health programs in Kentucky, seventy-two (72) of these programs are offered by the public sector. Allied health activities have significantly increased the interinstitutional cooperation and coordination among these programs.

Significance of the Kentucky Allied Health Project

Allied Health education programs in the 1960s underwent a significant growth phase fueled by federal monies from the Allied Health Professions Act of 1966. The funding stimulated the coalescence of many programs into schools of allied health professions in a collegiate or university setting. These schools expanded their student enrollments to fill the proliferating programs which represented a response to the nation's diverse health manpower needs.

However, curtailment of direct federal funding coupled with greater governmental demands for fiscal accountability in the late 1970s and early 1980s led to such events as program moratoria and a closer scrutiny of the fundamental goals and objectives of these schools.

While the development of allied health education has been characteristically segmented, the impact on the management of education for the 1980s mandates activities that are collaborative and articulated. Can allied health education in Kentucky, faced with such driving forces as shrinking economic resources, demands for accountability in costs, productivity and outcomes and changes in major technologies, meet these challenges?

In an attempt to meet these challenges, the Commonwealth of Kentucky has proposed the development of a statewide system for allied health education. This system interlocks segmented educational components into a comprehensive structure. The system is based upon three major social concerns:

(1) The concern to meet the needs of the patient.

Many driving forces are pressing for new approaches to allied health education which will culminate in a comprehensive system of care for the patient. If the goal of comprehensive care is to be

achieved, there must be meaningful collaborative arrangements.

(2) The concern to meet the needs of students.

Students are seeking mechanisms for career mobility. A system of allied health education must be developed to help meet these needs. Much of the research on vocational choice and career mobility strongly support a flexible system of education with several entry and exit points. The goal of Kentucky's system of allied health education is to eliminate any unnecessary duplication or artificially imposed barriers that inhibit the ability or motivations of the individual.

(3) The concern to slow the spiraling cost of health care.

Allied health education cannot continue to operate oblivious to the cost to the patient. Allied health educators must recognize and find solutions to the problems of (1) eliminating unnecessary program duplication, (2) avoiding overtraining in terms of functions performed, and (3) improving the effectiveness and efficiency of programs.

In summary, the Kentucky Allied Health System is based upon three major social concerns: (1) the goal of comprehensive care for the individual, (2) the educational needs of the students, and (3) better utilization of existing resources.

Several barriers make the task of developing a system for allied health a difficult one; barriers created by curricula, educational institutions, health care facilities, and laws and state government agencies. However, perhaps the most formidable problem is overcoming professional biases. The temptation to exercise territorial imperatives is understandable. However, our greatest success occurred when educators philosophically believed in career mobility. In contrast, our greatest failures occurred when educators did not hold this philosophy and carefully guarded their "territory." To a

very real extent, philosophy and territoriality retarded progress.

Perhaps the significance of KAHP is that a system has been developed considering:

What is best for the patient?

What is best for the student?

How can a system of allied health education be developed that is highly efficient and integrated?

Organization of KAHP

Six phases were designed to meet KAHP's major objective of developing and implementing a statewide system of articulated allied health education. These phases are summarized in Table 1.0.

Table 1.0.

Phases of the Kentucky Allied Health Project

Phase I	Phase II	Phase III
Literature Review Manpower/Program Data Program Directory Evaluation Design Task Force	Six Discipline Advisory Groups Evaluation and Research Technical Advisory Group Role and Function Delineations Curriculum Reviews Manpower Models	Model Curricula Potential Articulation Designs Transfer Agreements Drafts System Recommendations
Phase IV	**Phase V**	**Phase VI**
Transfer Agreement Negotiations	Final Articulation Designs Articulation System Preparation Recommendations to CHE for Action	Statewide System Project Evaluation Articulation System Monitoring

To develop a model for statewide planning in allied helath education, six disciplinary clusters were chosen. These clusters include: (1) clinical laboratory sciences, (2) dental auxiliaries, (3) nutrition/dietetics, (4) radiological sciences, (5) rehabilitation therapies, and (6) respiratory therapy. All levels of programs within each discipline cluster which existed in Kentucky were included in the system.

Phase I: Planning

KAHP's planning was accomplished by several individuals and groups working in concert providing a rich interplay of ideas and abilities. In the planning phase, the staff began a literature review to determine if similar efforts had been made, their strengths and weaknesses, and their relevance to KAHP. In addition, the staff began to synthesize relevant manpower and educational program data. The merging of allied health manpower data and educational program data was viewed as essential for statewide planning. While the Council collected information regarding public higher education, a complete directory needed to include private education, vocational education, hospital-based programs, and proprietary programs. Consequently, the first planning task was to complete a statewide inventory of allied health education programs. This inventory provided the basis for activating the discipline advisory groups for Phase II.

The establishment of an overall project evaluation design was also completed in Phase I. The planning and evaluation procedure known as Program Evaluation and Review Technique (PERT) was selected to provide continuous program evaluation of progress toward the achievement of predetermined objectives.[3]

A final activity in Phase I was the activation of the Allied Health Task

Force in May, 1979. The fifteen (15) member Task Force was composed of representatives from the public colleges and universities, independent colleges and universities, vocational schools, practicing clinicians, and hospital administrators. The primary objectives for the Task Force were to provide general coordination for the project and help secure support for the project from essential publics.

Phase II: Developing and Comparing Curricula

The first step for Phase II was to activate the six discipline advisory groups in September, 1979. The membership for these six advisory groups was recommended by the Allied Health Task Force. Each group was composed of approximately 15 members (a total of 90 individuals). These individuals were chosen to represent public and independent colleges and universities, vocational schools, proprietary schools, hospital-based programs, practicing clinicians, and professional organizations. (See Figure 1.0.) The central concept used in selecting these advisory group members was that those individuals responsible for implementing project recommendations should assume key leadership positions in developing the recommendations. It was also the project staff's basic belief that there should be shared responsibility between educational institutions and the statewide coordinating board for planning a system of allied health education.

In addition to the activation of six discipline advisory groups, the project was also assisted by an Evaluation and Research Technical Advisory Group. The primary objectives of this group were to (1) develop the methods

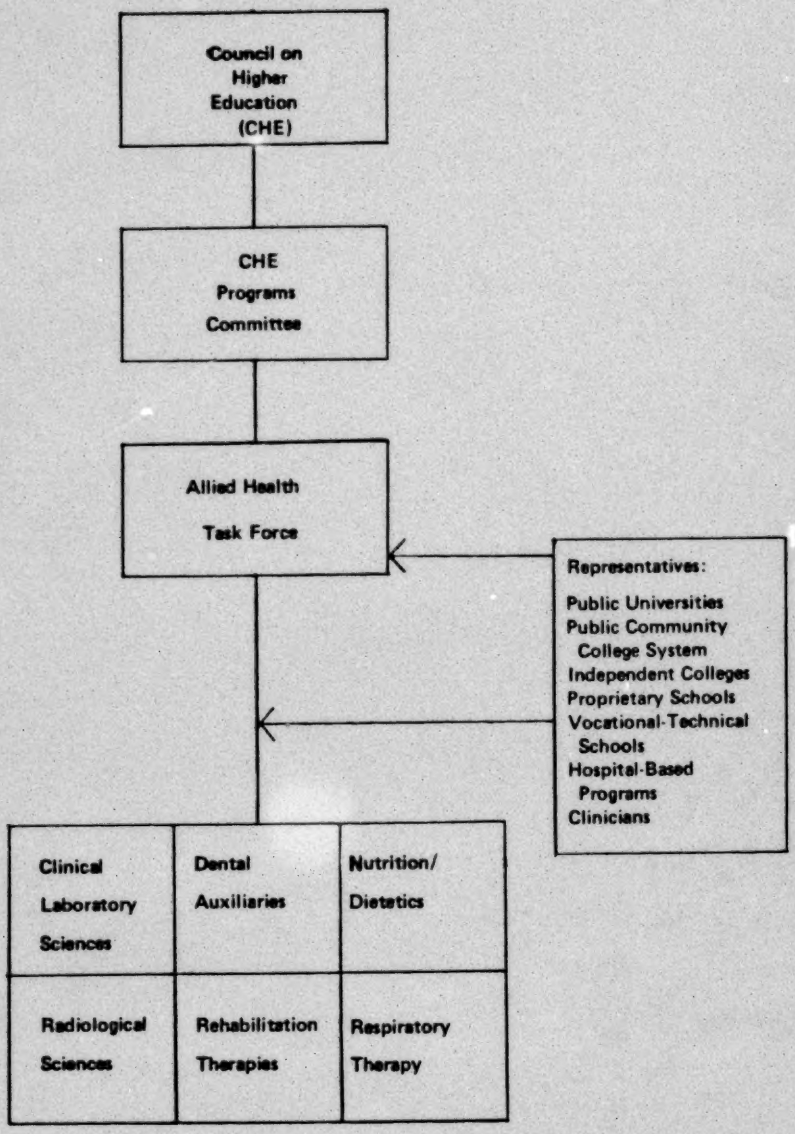


Figure 1.0 Organizational Structure of the Kentucky Allied Health Project

and instruments for the evaluation and implementation phase of the project, (2) review a competencies research model for use by two discipline advisory groups, (3) develop a manpower projection model, (4) develop a graduate follow-up model, (5) develop a program cost assessment model, (6) develop a practitioner profile component, and (7) guide data collection and analysis.

A major activity in Phase II was the delineation of roles and functions for each level of practice within each allied health profession and the identification of competencies by level with the goal of developing curricula. This task was seen as an essential prerequisite to the design of articulation models. Each discipline advisory group approached the delineation of roles and functions differently depending on the success of their respective professional associations.

The Respiratory Therapy and Nutrition/Dietetics groups chose to use the Health Services Mobility Study (HSMS) Method of Task Analysis and Curriculum Design [4] since neither group had an acceptable and comprehensive delineation of their practices. The Clinical Laboratory Sciences group validated competencies that had been developed by their professional society. The Dental Auxiliaries group chose to utilize the roles of dental auxiliaries as specified by the Kentucky Dental Practice Act. While they realized that roles may vary by state, they chose to develop an articulation model that could work within Kentucky.

The Radiological Sciences group was represented by several similar but yet unique professions (i.e., radiography, radiation therapy, nuclear medicine, and radiation health). This group approached the delineation of roles and functions on separate but parallel paths. Each discipline in the cluster used existing resources to finalize their curricula.

While each discipline advisory group was developing a curricula that contained the information needed for safe, competent professional practice, they also gathered program-specific information such as course outlines, clock hours, percentage of lecture, lab/and/or clinical components per course, minimal acceptable grades and the pre-professional and professional components of each curriculum. The data provided the fundamental information to begin planning the early phases of transfer negotiations.

Another major activity in Phase II was the development of a resources/ requirements model for each discipline for the purpose of manpower projections. The manpower data is essential information when considering the establishment, expansion, continuation, or termination of allied health programs. Three manpower models will be applied to the five allied health disciplines studied in KAHP. The models are: (1) manpower-population ratio, (2) trend analysis based on time series, and (3) health needs. Based on the manpower models KAHP completed for physical therapy [5] and respiratory therapy, [6] data are being collected to complete the clinical laboratory sciences and radiological sciences manpower models. While the limitations of making manpower projections are recognized, the information added another dimension to statewide planning efforts.

Phase III: Articulation Review

Joint meetings between the Discipline Advisory Groups and the Allied Health Task Force were held in the early summer of 1981. Together the groups (1) reviewed developed curricula, (2) reviewed the articulation designs within each discipline, (3) discussed recommendations for implementing and finalizing draft articulation agreements, and (4) discussed recommendations

for implementing, monitoring, and evaluating the system.

These joint meetings provided an opportunity for the groups to share not only their products such as curricula and draft transfer agreements, but also to discuss broader and less measurable outcomes of the process.

For example, the Task Force representative from vocational education shared the following:

> When the vocational education administrators asked the vocational faculty to participate on this project they agreed, but with little enthusiasm. However, their efforts resulted in the development of mutual respect between vocational education faculty and higher education faculty in the state. In addition, it enhanced communication within vocational educational programs. As a result of this communication, curricula were revised and strengthened. Furthermore, the vocational education faculty feel kinder toward higher education than they have in the past. Previously, they had felt like second class citizens in higher education. They emerged feeling that they were partners or co-equals. Consequently, they felt good about themselves and their programs. We have better vocational education programs because of their efforts.

Phase IV: Developing and Negotiating Transfer Agreements

After the joint meeting(s) of the Discipline Advisory Groups and the Task Force, mini-meetings were planned with selected Task Force members and faculty to help plan for the implementation of some of the transfer agreements.

Competency-based education was used as the theoretical framework for developing and negotiating transfer agreements. Types of agreements included the block credit transfer agreement and the course specific transfer agreement. Agreements were negotiated between educational systems and between specific programs/institutions. [7]

Phase V: Preparing the Articulation System

The primary activities in this phase included (1) final preparation of

discipline specific articulation designs and (2) the preparation of a comprehensive statewide articulation system. Throughout the project the Task Force had a major responsibility in the formulation of recommendations for a statewide system. These recommendations will go to the Council's Programs Committee and then to the Council on Higher Education for action.

Phase VI: Evaluation and Revision

Two primary evaluation components were planned: (1) evaluation of the project's ability to meet its stated objectives and (2) recommended procedures for evaluating the ability of the implemented system to facilitate the entry into and exit from an allied health educational program by capitalizing on student's previous relevant education and experience (i.e., ongoing monitoring of the success of the transfer agreements.)

KAHP's Approach to Leadership.

This section is included to share with others the philosophy upon which the group meetings were planned. In addition it will explain the evoluntary developments in terms of group process. Particular emphasis will be placed on the importance of group centered leadership and leadership as a shared function. It is hoped that by sharing these intimate relationships others will be encouraged to participate in similar endeavors.

Traditional views of leadership: (1) focus on the group's task; (2) the leader directs and controls; (3) the feelings and emotions of group members are not recognized; (4) the leader assumes full responsibility for decisions; and (5) the task becomes more important than individual needs.

These traditional views of leadership were abandoned. KAHP staff viewed leadership as "Group Centered Leadership." While fully recognizing

the importance of the task of developing a statewide system for allied health education, we also recognized that member interactions and the emotional reactions of individuals would have a profound effect on the successful completion of our task.

Consequently we viewed leadership as service. Such service included 1) helping the group develop a trusting climate, 2) encouraging members to freely express their feelings and 3) assisting members in accomplishing their task.

Leadership was not something that just the designated project staff members did. Leadership was shared with all members of the group. By recognizing that leadership was a group responsibility, it was also recognized that success or failure would be equally shared by all group members. This concept of shared group leadership was important because it recognized that no one person could possibly be simultaneously aware of all the group-maintenance tasks, group-building tasks, and individual problems existing at any given moment within the group. Such awareness must be shared by all members of the group.

In summary, our belief in group centered leadership was based on the assumptions that: (1) the meetings were owned by the members; the KAHP staff was a helper to the group; however, the group was responsible for all major decisions; (2) members not only shared ownership, but responsiblity for completing tasks; (3) feelings, emotions, conflict were recognized as legitimate; and (4) the needs and feelings of all members were viewed as important.

With this as our philosophical framework, we observed each discipline advisory group work through three stages of group development.[8] Stage one considers orientation, hesitant participation, and search for meaning.

Our orientation meeting held on September 6, 1979 provided the setting for stage one "goblet issues". During this stage group members size each other up through discussion of nonemotionally laden topics. The term comes from cocktail party type communication where each guest sizes up the others by looking through a cocktail "goblet".

At this meeting Dr. Joy Kirchner, who had written the project grant, described the historical foundation for the project. Project objectives were described along with the roles of the discipline advisory groups and the project staff. Also at this meeting a group process activity called "Self Portrait" was completed. The self-portrait activity was planned to help promote positive relationships among and between discipline advisory group members and project staff. The advisory group members and project staff were asked to draw a story of their lives on a large piece of paper and share this story with the other members of the groups. While on the surface this appears to be a relatively unsophisticated procedure, it provided a successful way to meet one another fairly quickly. Hopefully, it assisted in the development of an accepting environment within which the groups could work during the coming year.

In stage two, issues regarding dominance, control, and power emerge. Hostility to the "leader" may also emerge as the group members realize that the "leader" is not perfect. We found that some meetings were not as effective as others; some advisory groups willingly shared all their available resources, (i.e., curricula, admissions policies and student success/failure rates) while other groups found it difficult to share. Democracy takes time; the price of group decision making and consensus is time, trust, and openness. Futhermore, tradition seemed to inhibit meeting effectiveness. For example, the older more established professions such as clinical laboratory sciences and

the rehabilitation therapies had much more difficulty planning sequences of transfer, especially for the professional courses within the curricula. In contrast, respiratory therapy found the task less cumbersome. However, at no time during stage two did we feel overt hostility.

In stage three group members began to have concerns about intimacy and closeness. As the groups began to be able to more freely address their positive and negative feelings, they became more cohesive and mature. This maturity was characterized by the following:

(1) Serious involvement in activities

As the members began to feel a sense of ownership and involvement in their tasks, they assumed greater responsibility for such activites as report writing and team building.

(2) Trust and caring

The trust and caring that emerged in some groups allowed the members to express concerns, feelings, fears, and ideas.

(3) Accepting new members

It was recognized that group membership would always be in the process of change, adding new members and losing old ones. However, new members were accepted and seen as a potential resource.

The previous description basically describes the work of the five discipline advisory groups that were viewed as somewhat or very successful. However, not all our discipline advisory groups were successful; and we would like to briefly try to present a rationale for why one group failed. A successful group interacts over time to accomplish one or more goals that are valued by each of the participating individuals.[9] The physical therapy advisory group's philosophy statement stated that there was currently no organized effort on the part of the physical therapy profession to facilitate the upward mobility

of the physical therapist's assistant within the profession. Mirroring this philosophy, physical therapy's support of transfer for the assistant was somewhat less than whole hearted.*

As a result the project goals were in conflict with the goals of the physical therapy advisory group members. Because upward mobility for the assistant was not "valued" by this group, the project's objectives for this group were not achieved. This was further reinforced to us by such statements as - "I don't feel its appropriate for this group to do more at this time." "Prove there is a need for articulation by a statistical study." "We met our objectives a long time ago, when we stated articulation was not appropriate at this time" " I would prefer if the project were terminated."

To summarize, no matter how competent the group leader or how many resources are available in terms of time and money, if the group does not highly value the goals, the group will fail.

To conclude we would like to offer a number of suggestions that may be useful to newly formed groups that have as their goal the development of articulation agreements:

(1) Develop an awareness for the interdependent behaviors that must be performed by group members.

Task behaviors are those behaviors that are related to achieving the groups goals such as giving suggestions or directions and seeking information. Maintenance functions are those behaviors related to maintaining harmonious relations among

*While the Rehabilitation Therapy DAG did not develop an articulation model that transferred professional course credit, an articulation agreement between the Physical Therapy Program at the University of Louisville and the Physical Therapist Assistant program at Jefferson Community College was developed after the Rehabilitation Therapy DAG decided to discontinue meeting.

members such as helping, rewarding, relieving tension by joking, and showing satisfaction. Both task behaviors and maintenance behaviors are equally important.

(2) View leadership as a shared group function.

By viewing leadership as a shared group function, all members are encouraged to contribute and the sharing of leadership ensures that all the resources of the group will be used productively.

(3) Willingly accept new members.

While a high turnover of group membership may indicate that something is seriously wrong within the group, some turnover is natural. Welcome each new group member as a valuable resource.

(4) Allow "hidden agendas" to surface in open discussion.

Hidden agendas occur because an individual believes that the item may be judged as wrong or inappropriate, rather than as a reflection of a legitimate need or purpose. Remember, group members may be trying to simultaneously achieve individual and group goals. Often the degree to which both goals can be achieved determine the success of the group. Recognize that members may bring a hidden agenda to the group--one they hesitate to share openly because it is so self-oriented. Allow hidden agendas to surface in open discussion so that personal needs may be handled without disturbing the group.

(5) View conflict as natural.

Most substantive issues will involve some conflict. View this conflict as natural and indeed inevitable. Conflict worked through constructively can provide an important success experience for the group. Furthermore, it will reduce the fear of conflict and further strengthen the group.

REFERENCES

1. Kentucky Council on Higher Education, Kentucky and Comprehensive Planning for Higher Education, Council on Higher Education, Frankfort, KY, 1976.

2. A System of Higher Education in Kentucky including University Mission Statements, Council on Higher Education. Frankfort, KY, 1977.

3. Breegle, G. G. "Planning a Kentucky Allied Health Education Project with the Program Evaluation and Review Technique." Paper presented at the annual meeting of the American Society of Allied Health Professions, Colorado Springs, Colorado, 17 November, 1979.

4. Gilpatrick, Eleanor: The Health Services Mobility Study Method of Task Analysis and Curriculum Design. Employment and Training Administration, U. S. Department of Labor Contract No. 82-34-69-34, 1977.

5. Breegle, G. and King, E. "Three Futures: A Physical Therapy Manpower Planner's Dilemma" Third Annual Needs Assessment Conference. Louisville, KY: Mar., 1981.

6. Geiger, F. and King, E. "Respiratory Therapy Manpower in Kentucky, 1981: A Statewide Study." Paper presented to the Allied Health Task Force, Frankfort, Kentucky, 24 May, 1982.

7. King, E. and Breegle, G. "A Comparison of Administrative, Faculty/ Clinician and Student Needs to Facilitate Statewide Planning in Allied Health Education." Paper presented at the Third National Conference in Need Assessment in Health and Human Service Systems, Louisville, Kentucky, March, 1981.

8. Yalom, Irvin: The Theory and Practice of Group Psycho Therapy. Basic Books, Inc., New York, 1970.

9. Bertcher, Harvey T.: Group Participation: Techniques for leaders and members. Sage Publications, Beverly Hills, 1979.

DENTAL AUXILIARY
DISCIPLINE ADVISORY GROUP
STATEMENT OF PHILOSOPHY

The Dental Auxiliary Discipline Advisory Group believes that in order to ensure the health and safety of the public with a quality standard of care, formally structured education and training are essential for preparing dental auxiliary personnel. It is further believed that dental procedures, be they performed by a dentist or an auxiliary, should be evaluated using a single standard. The only method of maintaining this single standard is through an academic program that provides clinical preparation and background in the related sciences that is equivalent in scope and quality to the aspect of the dental curriculum which prepares the dental student for the same functions.

The four categories of dental auxiliary personnel apply knowledge, skills and judgment of varying scope and depth in some areas, which all have relevance in the delivery of care. The fact that elementary tasks or functions do not require a significant amount of education or training is recognized through emphasis in the curriculum, particularly the time allocation.

To ensure that a dental auxiliary will competently perform delegated functions and assist in providing high quality patient care to more people, a defined level of competency must be a demonstrated prerequisite to entry into practice.

DENTAL AUXILIARY OCCUPATIONAL DEFINITIONS

Dental Assistant

A dental assistant is an individual "...whose work includes those acts of both supporting and delivering dental services in the general areas of operatory chairside assisting, education, reception and secretarial, and dental laboratory work" (Terry, 1975, p. 7). Tasks usually performed by dental assistants include preparing the operatory and the patient, transferring instruments during dental procedures, sterilizing instruments, and preparing dental materials.

Dental Hygienist

A dental hygienist is an individual "...whose primary work includes acts related to providing oral prophylaxis and to providing preventive dental education but which may also include acts of both supporting and delivering other dental services..." (Terry, 1975, pp. 7-8). Inspection of the oral cavity, diet counseling and application of decay preventive agents are additional services commonly provided by dental hygienists.

Dental Laboratory Technician

A dental laboratory technician is an individual "...who fills the dentist's

prescriptions for various kinds of restorative and corrective appliances but may include other tasks in the general areas of operatory chairside assisting and education" (Terry, 1975, p. 8). Technicians may specialize in certain types of appliances and prostheses (e.g. orthodontics or crown and bridge) or supply dentists with a full range of laboratory services.

Expanded Duty Dental Auxiliary

An expanded duty dental auxiliary is a dental assistant, dental hygienist, or dental laboratory technician, to whom new and additional tasks of greater skill and responsibility have been delegated. These tasks, usually intra-oral in nature, were formerly performed only by the dentist.

DEVELOPMENT OF THE DENTAL AUXILIARY PROFESSIONS

Dental Assisting

Dental assisting originated in the late 1800s. At that time, the first women were trained in dental offices to carry out secretarial duties, receive patients, and prepare dental materials (Nixon, p. 3). This role characterized dental assisting until the 1950s when concepts of four-handed, sit-down dentistry gained acceptance. Dental Auxiliary Utilization (DAU) Programs were established in dental schools to teach those concepts, and resulted in dental assistants becoming critical team members in the efficient delivery of dental services. During the 1960s, a number of researchers (Abramowitz, 1966; Campbell and Blandford, 1977; Hammons and Jamison, 1967; Soricelli, 1972; Lotzkar, Johnson, and Thompson, 1971; and Brearley and Rosenblum, 1972) investigated the feasibility of delegating certain reversible intra-oral functions to dental auxiliaries. The positive research results led some states to amend their Practice Act to

further expand the dental assistant's role.

In 1961, only 26 accredited dental assisting training programs were offered in the United States (National Center for Health Statistics, 1977). That number more than doubled by 1965 and surged to 273 by 1977 (U. S. Department of Health, Education, and Welfare, 1979). Despite the proliferation of formal programs, on-the-job training remains a common route to professional status. Differences in training, state Practice Acts, and dental practitioners' work styles have contributed to the diverse scope of functions performed by dental assistants today.

Dental Hygiene

The dental hygiene profession emerged during the first decade of the twentieth century in response to dentists' developing beliefs in preventive dentistry. When the effectiveness of prophylactic procedures became evident, the first hygienists were trained in dental offices to deliver preventive care. Basic preventive functions of the hygienist have evolved with technological developments in dental equipment and products and with the increase in knowledge of the causes and prevention of dental disease. Research conducted during the 1970s examined the feasibility of delegating certain irreversible dental procedures to hygienists (Ancell, 1972; Powell, 1974; Lobene, 1974; Sisty, 1978; and Spohn and Mast, 1974). Despite the studies' positive results, changes in the role of the hygienist have generally been limited to the addition of reversible expanded functions.

The first formal dental hygiene program was established in 1910 and the number of programs increased slowly until the mid-sixties. Between 1966 and 1979, the number of accredited programs increased rapidly from 48 to 200 (U. S. Department of Health, Education, and Welfare, 1979; Commission on

Dental Accreditation, 1980). Several programs include instructional content in expanded functions as well as the traditional dental hygiene functions related to prophylaxis and health education.

Expanded Function Dental Auxiliaries

The expanded function dental auxiliary emerged as a result of the previously cited research conducted between 1960 and the mid-seventies. The earlier studies examined the feasibility of delegating reversible dental procedures to dental assistants. Later research investigated the ability of dental hygienists to perform irreversible procedures. It is important to note that these research projects were initiated because of a prevailing concern that demand for dental services would soon exceed the supply capabilities of the dental profession. Dentistry hypothesized that expanded utilization of auxiliaries might increase productivity and thus help meet the impending demand for care. The research showed that with expanded function training, auxiliaries could perform as well as dentists on the tasks learned. Other studies demonstrated that dental productivity increased when expanded function assistants were utilized (Pelton, Embry, Overstreet, and Dillworth, 1973; Pelton, 1973; Pelle, Soricelli, and Bronstein, 1973).

A majority of state Practice Acts were eventually revised to allow dental assistants and/or hygienists to perform reversible expanded functions (Council on Dental Education, 1980). (Most states continue to restrict auxiliaries from providing irreversible procedures.) The Acts vary in the type of auxiliary permitted to perform expanded functions, required training, required registration/licensure, and scope of tasks allowed. Because of these differences, it is difficult to define a role for expanded function dental auxiliaries on a national basis.

A variety of expanded functions are taught within many dental assisting and hygiene programs. Free-standing expanded function training programs exist, but are not accredited or listed by the Commission on Dental Accreditation.

Dental Laboratory Technology

Dental appliances and prostheses were constructed only by dentists until the 1800s, when dental laboratory technology surfaced as an independent profession (Gorman, Sowter, and Langenderfer, 1967). As new materials and techniques were developed, dentists began to hire or send work to dental laboratory technicians. In the early 1900s, most laboratory work was still done by dentists. By 1960, 97% of laboratory work was done by technicians.

Commercial dental laboratories employ the majority of technicians, while others work in private labs and dental offices. Dental laboratories vary from full service (providing all types of appliances and prostheses) to specialty labs (e.g. crown and bridge or orthodontics), and the functions of technicians vary concomitantly. Specialties within dental laboratory technology are recognized through a National Certification process.

Since 1977, five states have revised their Dental Practice Acts to allow technicians to practice the "specialty" of denturism. Denturists are technicians who not only fabricate dentures, but also perform certain clinical tasks with or without the supervision of a dentist. Denturism is a controversial concept and is currently illegal in Kentucky.

The number of accredited dental laboratory programs has increased from 4 in 1960 to 58 in 1980 (Commission on Dental Accreditation, 1980). This growth parallels increases in other dental auxiliary programs over the same period of time. Despite the increased numbers of programs, on-the-job and military training remain common routes to professional status for dental technicians.

Dental Assisting

Dental assisting training takes a variety of forms in Kentucky. Formal training programs range in length from six to twelve months and are offered by a university, proprietary schools, and vocational schools. The program curricula are fairly standardized in content and prepare students for entry-level competency. Formal training is not required in Kentucky (except for taking radiographs) and many dental assistants receive their training on-the-job. Others have been trained in the military. Dental assistants achieving professional status through these differing pathways are not differentiated by the Kentucky Dental Practice Act, and may all perform equivalent tasks. An assistant may become certified by passing the National Certification Examination. While certification does not affect roles or functions in Kentucky, some states allow specific dental procedures to be delegated only to certified assistants.

Dental Hygiene

A license granted by the Kentucky Board of Dentistry must be obtained to practice dental hygiene in the Commonwealth. A license is granted only to graduates of accredited dental hygiene programs who have passed the written National Board Examination and a clinical exam. Hygienists trained by the military are not eligible for licensure in most states unless they meet the above criteria.

Dental hygiene programs in Kentucky are offered by three community colleges and two universities. Regardless of the institutional setting, the professional training of the hygienist leading to licensure spans approximately two years.

Dental Laboratory Technology

Dental laboratory technicians are trained on-the-job, in formal educational programs, and military programs. During the first two years of training or work experience, technicians are classified as apprentices by the Kentucky Board of Dentistry. Apprentices may perform any task carried out in a dental laboratory. Upon graduation from a two year program or after two years of on-the-job training, technicians are registered with the Board. Registration has no effect on the roles or functions of dental technicians. Two to three additional years of work experience are needed for National Certification Examination eligibility. The Kentucky Dental Practice Act differentiates certified dental technicians only in that it requires every registered commercial dental laboratory to employ or be supervised by a certified dental technician.

Expanded Function Dental Auxiliaries

Expanded function auxiliaries in Kentucky are trained on-the-job, through continuing education, or in formal educational programs. Both dental hygienists and assistants may, according to the Kentucky Dental Practice Act, perform expanded functions regardless of the type of training received.

One dental assisting and five dental hygiene programs in Kentucky offer some level of expanded duty training. In addition, two universities offer continuing education programs in expanded functions for on-the-job and formally trained auxiliaries.

ACCREDITATION

Formal dental auxiliary programs are accredited by the Commission on Dental Accreditation of the American Dental Association. The Commission

grants accreditation status when program review reveals accreditation standards are adequately met.

Accreditation standards for dental auxiliary programs were developed through and approved by the American Dental Association. Standards were first approved in 1946 for dental laboratory technology, in 1947 for dental hygiene, and in 1960 for dental assisting (Commission on Dental Accreditation, 1980). The three sets of standards have been revised over time to meet the changing needs of the professions. Expanded functions are addressed in the dental assisting and dental hygiene standards, and applied only when those functions are taught as a part of those programs.

Accreditation eligible or preliminary provisional approval is the initial status granted to new programs conforming to the standards. Existing programs are reviewed approximately every seven years and may receive one of the following accreditation classifications: provisional approval, conditional approval, or approval. Graduates of accredited dental hygiene and assisting programs are ensured eligibility for licensure/certification examinations, while eligibility for the dental laboratory certification examination is determined by length of work experience.

REGULATORY PRACTICES

The Kentucky Board of Dentistry has the authority and responsibility to regulate the dental and dental auxiliary professions for the purpose of protecting the public health. Regulation entails credentialing dental personnel and enforcing the statutes, rules, and regulations pertaining to dentistry.

The statutes, listed in the Kentucky Dental Practice Act (1976), define the scope of practice for dental hygienists and laboratory technicians. Rather

than list tasks that may be performed by dental assistants and expanded function auxiliaries, the Practice Act lists tasks that may not be delegated to them.

Only dental hygienists and laboratory technicians are credentialed, in accordance with the Practice Act, by the Kentucky Board of Dentistry. Hygienists, like dentists, are licensed after passing a clinical examination administered by the Board. Dental technicians are registered by the Board without being tested. No credentialing or testing mechanisms exist for dental assistants or expanded function auxiliaries in Kentucky.

MOBILITY AND ARTICULATION

Concern about limited articulation among Kentucky Allied Health programs surfaced with the publication of Part Two: Allied Health, Phase One Report in 1975. The report stated,

> "The limited articulation and coordination among and between allied health and health related educational programs compromises the extent to which these programs meet Kentucky's health manpower and service needs" (p. 9).

Recommendations regarding articulation followed:

> "A coordinated, statewide plan for allied health and health related education should be developed by the Council on Public Higher Education, indicating the roles of the various types and levels of educational institutions as they choose to participate in allied health education. While the identified roles should be developed to meet the needs of the state efficiently and economically, they should also be flexible enough to provide latitude for institutional experimentation and innovation.
>
> The State plan for allied health and health related education should result in a system of allied health education which permits both entry and exit of prepared personnel at a variety of levels. Personnel in allied health fields should be able to transfer into related programs, and to enter a higher level of a specific program with a minimum of loss of credits. Credit should also be awarded for education which is gained through a variety of non-traditional methods (e.g., work experience), if it is comparable to that gained through formal course work.

> The sharing of facilities, equipment, faculties, research and clinical resources should be encouraged among public and private institutions, educators and practitioners in allied health and health related professions in the state" (p. 10).

The report included the following discussion:

> "In addition to interinstitutional conflict, the lack of program articulation between institutions has created hardships for students throughout the State. Many educational programs were designed as terminal programs to train students to fill specific jobs. While such a design is defensible in theory, it is wasteful when it is indeed "dead-ended" and the graduate has no opportunity for upward or lateral mobility, short of starting anew in another program. When students are required to duplicate educational experiences gained in initial levels of programs or in practice environments, or are faced with unrealistic challenge examinations in order to advance, they require additional expenditures of State and individual monies that doubtfully return that investment in improved health care delivery by the practitioner. There are currently few examples of interinstitutional ladder programs between any levels of post-secondary education in allied health and health related education in the Commonwealth" (p. 42).

This discussion accurately describes the state of articulation in Kentucky's dental auxiliary programs. Articulation for dental auxiliaries in Kentucky was specifically addressed in the following recommendation from Part Three: Dentistry, Phase I Report:

> "A ladder approach to auxiliary education, which recognizes previous knowledge and experience and facilitates upward mobility of dental auxiliaries, should be developed" (p. 43).

The issue of limited articulation is not unique to Kentucky. The California Department of Consumer Affairs identified the absence of a dental auxiliary career ladder as one of two major problems stemming from California's restrictive dental licensure policy (California Department of Consumer Affairs, 1979). In response, the Dental Auxiliary Act of 1974 established a career ladder comprising five auxiliary categories and specified that previous education and experience should be applied to each successive step in the ladder. It is interesting to note that as yet the California Board of Dental Examiners has failed to establish all the regulations needed to implement the career ladder.

The Coordinating Board of the Texas College and University System (1974) investigated articulation for dental auxiliaries and made recommendations for the following types of transfer patterns:

1. Vertical mobility for dental assistants into dental hygiene,
2. Vertical mobility for dental laboratory technologists into dentistry,
3. Vertical mobility in a 2 + 2 career ladder pattern for dental hygienists,
4. Vertical mobility for dental hygienists into dentistry, and
5. Lateral mobility for dental hygienists to other allied health disciplines.

The Board also stated that curricular modifications would not eliminate barriers to articulation resulting from admission requirements, accreditation standards, and licensing practices.

An Allied Health Articulation Study, which included dental auxiliaries, was conducted in North Carolina (Boatman and Huther, 1974). Unlike the two projects previously mentioned, North Carolina concentrated on career mobility between basic occupational preparation programs and upper level programs in education, administration and research.

> "With the changing patterns of educational preparation for careers in the allied health sciences and with the philosophy that appropriate learning experiences can be gained outside the classroom and traditional education approaches, mechanisms must be established that will provide for recognition for such experiences. Further, with the increasing need for well-qualified and properly trained dental auxiliary personnel in the public health/education sectors and the changing emphasis on preventive dentistry, and with the increasing needs for well-trained persons in teaching and educational administration, it has become essential that new and additional avenues of career mobility and advancement be made available to those dental auxiliary students who appear to be especially motivated to seek additional advanced education. Accordingly, the following guidelines relating to the transfer of dental auxiliary students who may have obtained their profession/technical education in a two-year community college or technical institute have been established.

> Dental hygienists, dental assistants, and dental technicians who have completed their professional education and are certified or eligible for certification should be permitted to pursue an educational program that will provide education in greater depth than that which is available in present two-year programs" (p. 66).

Articulation between dental auxiliary programs cannot occur without examining the competencies common to two or more types of auxiliaries. The Division of Vocational Education at the University of California, Los Angeles succeeded in analyzing the tasks of dental auxiliary practitioners and identifying overlap in functions (Kingston and Freeland, 1970). This type of analysis is requisite to the development of a core curriculum.

The concept of an articulated core curriculum for dental auxiliaries has been applied at the Community College of Philadelphia (Scoles, 1979), the University of Pittsburgh (Forrest, Durocher, and Morgart, 1968), and eleven of the Ontario Colleges of Applied Arts and Technology (Bondarchuk, 1981). All of these programs progress in phases with defined exit points first for dental assistants and later for hygienists. Some have included branching tracks for personnel comparable to Kentucky's expanded duty dental auxiliary. The programs have not been free from problems, but demonstrate the feasibility of employing a core curriculum.

Ferris State College in Michigan added another dimension to resolving the articulation issue for dental auxiliaries. Competency assessment mechanisms are being developed and administered to determine the appropriate level of advanced placement for prospective students (Novak, 1978). By focusing on student competencies, this approach will open career mobility options to auxiliaries with nontraditional learning experience.

The Dental Auxiliary DAG, through the Council on Higher Education's Kentucky Allied Health Project, has responded to the articulation recommendations from the 1975 Phase One Report. They have focused primarily on mobility within

basic occupational preparation programs and have incorporated into their articulation model many of the ideas presented in this literature review. The result is a unique statewide plan for articulation which will benefit dental auxiliary personnel and the citizens of Kentucky.

EDUCATIONAL CHALLENGES OF ARTICULATION

The number of dental auxiliary programs in Kentucky has greatly increased in the past few years. The programs were generally established independently by a variety of educational institutions, each with unique policies. The resulting institutional and program differences contributed to limited career mobility for dental auxiliary students and practitioners.

Dental assistants, the group most affected by limited articulation, have found that little of their prior professional education or experience translated into credit hours with concomitant course exemptions in dental hygiene and dental laboratory programs. Practitioners with nontraditional learning experience (on-the-job and military training) have faced similar barriers when moving into formal programs, regardless of their level of competency. Dental auxiliaries have achieved mobility only by completing all the requirements of a program, even though they may have demonstrated their proficiency elsewhere.

This duplication, a barrier to career advancement, can be minimized by assessing educational and experiential learning. Comparability of prior coursework can be determined by examining course objectives from sending and receiving programs. The ultimate goal of this examination is the writing of transfer agreements by program faculty. The agreements would specify student eligibility guidelines, course exemptions and credit granted, and the rights and responsibili[illegible] participating programs.

Previous experiential learning can be determined through competency assessment mechanisms. Mechanisms accepted or developed jointly by dental auxiliary faculty would clarify the competencies needed to move up a career ladder and lead to the objective evaluation of nontraditional learning experiences. Only through an objective evaluation process can faculty make sound decisions regarding appropriate placement for students with experiential learning.

Additional reductions in duplication might be achieved by altering the sequencing of certain program content. Content common to two levels of dental auxiliary education could be grouped, within a conceptual framework, into courses in the upper level program. This would increase the number of course exemptions available to the articulating student.

A statewide system of dental auxiliary education incorporating transfer agreements, competency assessment mechanisms, and sequencing changes will only become a reality through the continuing communication, cooperation, and dedication of Kentucky's dental auxiliary faculty.

REFERENCES

Abramowitz, J. "Expanded functions for dental assistants: a preliminary study." JADA 72 (1966): 386-391.

Ancell, M. Z. The dental hygienist as a periodontal co-therapist. Presented to the Section on Dental Hygiene Education at the annual session of the American Association of Dental Schools, Las Vegas, March 21, 1972.

Boatman, Ralph H., and Huther, John. Allied Health Education/ Transfer of Credit: Recommendations of the North Carolina Articulation Project. Chapel Hill: University of North Carolina, 1974.

Bondarchuk, Mary. Niagara College, Welland, Ontario. Telephone interview, March 1981.

Brearley, L. J., and Rosenblum, F. N. "Two-year evaluation of auxiliaries trained in expanded duties." JADA 84 (1972): 600-610.

California, Department of Consumer Affairs. California Health Personnel Licensure Policy: Career Mobility in the Dental Professions. Sacramento: Department of Consumer Affairs, 1979.

Campbell, E. E. and Blandford, D. H. "Expanded Functions for Auxiliaries - An Evolution." In The Dentist and the Assistant. Edited by S. Peterson. St. Louis: C. V. Mosby, 1977.

Commission on Dental Accreditation. Accreditation Standards for Dental Assisting Education Programs. Chicago: American Dental Association, 1980.

Commission on Dental Accreditation. Accreditation Standards for Dental Hygiene Education Programs. Chicago: American Dental Association, 1980.

Commission on Dental Accreditation. Accreditation Standards for Dental Laboratory Technology Education Programs. Chicago: American Dental Association, 1980.

Commission on Dental Accreditation. Accredited Dental Assisting Programs. Chicago: American Dental Association, June 1980.

Commission on Dental Accreditation. Accredited Dental Hygiene Programs. Chicago: American Dental Association, June 1980.

Commission on Dental Accreditation. Accredited Dental Laboratory Technology Programs. Chicago: American Dental Association, June 1980.

Coordinating Board, Texas College and University System. Final Report of the Study Committee on Dental Hygiene. Austin: Coordinating Board, Texas College and University System, 1974.

Council on Dental Education. Legal Provisions For Delegating Expanded Functions to Dental Hygienists and Dental Assistants. Chicago: American Dental Association, September 1980.

Forrest, Edward J.; Durocher, Roy; and Morgart, Helen. "Dental Assisting - Oral Hygiene Training: A Model Program." JADA 77 (December 1968): 1335-1340.

Gorman, John J.; Sowter, John B.; and Langenderfer, Harold Q. Dental Laboratory Technology; Orientation, Ethics, and Business Management. Chapel Hill: University of North Carolina, 1967.

Hammons, P. E., and Jamison, H. C. "Expanded functions for dental auxiliaries." JADA 75 (1967): 658-672.

Kentucky Board of Dentistry. Laws and Regulations Relating to the Practice of Dentistry, Dental Hygiene, and Dental Specialties. Frankfort: The Legislative Research Commission, 1976.

Kentucky Council on Higher Education. Kentucky and Health Sciences Education, Part Three: Dentistry. Frankfort: Council on Higher Education, 1975.

Kentucky Council on Higher Education. Kentucky and Health Sciences Education, Part Two: Allied Health. Frankfort: Council on Higher Education, 1975.

Kingston, Richard D., and Freeland, Thomas. The Dental Auxiliary Occupations: Task Analysis Data. Los Angeles: University of California, 1970.

Lobene, R. R., and others. The Forsyth experiment in training of advanced skills hygienists. JDE 38 (1974): 369-379.

Lotzkar, S.; Johnson, D. W.; and Thompson, M. B. "Experimental program in expanded functions for dental assistants: phase 1 base line and phase 2 training." JADA 82 (1971): 101-122.

National Center for Health Statistics. Health Resources Statistics, 1976-77 ed. Hyattsville: U. S. Department of Health, Education, and Welfare, 1977.

Nixon, James R. "Considerations in the Development and the Utilization of Dental Auxiliaries." University of North Carolina, 1973.

Novak, Darlene E. University of Louisville, Louisville, Kentucky. Interview, October 1979.

Pelle, N. D.; Soricelli, D. A.; and Bronstein, E. "Training Technotherapists for Use in an Urban Dental Care Program." Health Ser. Rep. 88 (February 1973).

Pelton, W. J. "Economic Implications of Adding Two Therapists to a Practice." JADA 87 (September 1973).

Pelton, W. J.; Overstreet, G. A.; Embry, O.; and Dilworth, J. B. "Economic Implications of Adding One Therapist to a Practice." JADA 86 (June 1973).

Powell, W. O., Jr.; Sinkford, J. C.; Henry, J. L.; and Chen, M. S. Comparison of clinical performance of dental therapist trainees and dental students. JDE 38 (1974): 268-272.

Scoles, Dixie. Community College of Philadelphia, Philadelphia, Pennsylvania. Interview, August 1979.

Sisty, N. L., and others. Evaluation of student performance in the four-year study of expanded functions for dental hygienists at the University of Iowa. JADA 97 (1978): 613-627.

Soricelli, D. A. "Implementation of the delivery of dental services by auxiliaries - the Philadelphia experience." Am. J. Public Health 62 (1972): 1077-1087.

Spohn, E. E., and Mast, T. Final Report. National Institutes of Health, Contract No. 72-4252, Division of Dentistry, U. S. Department of Health, Education and Welfare, 1974.

Terry, David. Determining Behavioral Task Content of the Curriculum in Occupational and Professional Education Programs: The Dental Auxiliaries. Urbana: University of Illinois, 1975.

U. S. Department of Health, Education, and Welfare. A Report On Allied Health Personnel. December 1979.

3 DISCIPLINE ADVISORY GROUP ACTIVITIES

The primary charge to the Dental Auxiliary Discipline Advisory Group was to develop a statewide plan for dental auxiliary education which would result in an articulated statewide system permitting entry and exit of prepared personnel at a variety of levels and improve interinstitutional efforts to share educational resources.

The purpose of this chapter is to share the Dental Auxiliary Discipline Advisory Group's activities. They are summarized as follows.

Phase One: Orientation Activities. Initially DAG activities included a review of the Group's charge, the sharing of each program's philosophy and goals and the use of the Program Evaluation and Review Technique (PERT) to plan overall activities. A description of how PERT was used to plan and evaluate the advisory group's activities is presented in Appendix A.

Phase Two: Model Curriculum Activities. Three subcommittees of the DAG were formed to collect data and write reports on current curricula, admission policies and transfer agreements. In addition, the curriculum subcommittee took primary responsibility for organizing the development of an ideal

articulated curriculum for the dental auxiliaries.

In planning an articulation model for dental auxiliary education one of the major barriers was the overlapping of competencies among and between the four types of auxiliaries. Consequently, prerequisite to developing articulation agreements, a core curriculum was developed. The core curriculum enables movement from dental assisting to expanded functions to dental hygiene with exit points at the end of each of the three curriculum phases. The core curriculum laid the foundation for the development of an articulation model in dental auxiliary education.

Phase Three: Negotiating the Transfer Agreement. Based on the articulation model, programs were identified where the most feasible transfer of credit could be negotiated. Recommendations were made to target other potential agreements and provide direction for future negotiations.

ARTICULATION MODEL

The identification of articulation barriers led the Dental Auxiliary Discipline Advisory Group (DAG) to base their articulation model on a core curriculum. The original core curriculum developed by DAG members identified overlapping competencies among and between the four types of auxiliaries (dental assistants, expanded duty dental auxiliaries, dental hygienists and dental laboratory technicians). A revised version enabled movement from dental assisting to expanded functions to dental hygiene with exit points at the end of each of the three curricular phases. This enabled the DAG to develop an articulation model that displays proposed movement up a dental auxiliary career ladder with minimal repetition of previously acquired competencies.

Articulated Curriculum Model

The Articulated Curriculum Model (Figure 2.0) is based on the revised "Ideal" Core Curriculum developed by the DAG. The model begins with content areas containing objectives common to dental assistants, expanded duty dental auxiliaries and hygienists. The next cored level indicates areas having

DENTAL HYGIENE

Radiography
Preventive
Preclinical and Clinical Dental Hygiene
Periodontics

EXPANDED FUNCTIONS AND DENTAL HYGIENE

Pharmacology
Pathology
Communication Skills
Preventive
Oral Histology and Embryology
Psychology
Microbiology
Nutrition
Specialties
Chemistry
Community Oral Health
Radiography
Dental Materials and Restorative Dentistry
Tooth Morphology
Head & Neck Anatomy
Sociology
Clinical Dental Assisting
Periodontics
General Anatomy and Physiology

DENTAL ASSISTING, EXPANDED FUNCTIONS AND DENTAL HYGIENE

Pharmacology
Pathology
Professionalism-Ethics-Jurisprudence
DAU & Four-Handed Dentistry
Dental Materials & Restorative Dentistry
Head and Neck Anatomy
Periodontics
Specialties
Community Oral Health
Dental Office Emergencies
Radiography
Preventive
Microbiology
Nutrition
General Anatomy & Physiology
Interpersonal Communications
Business and Office Management
Communication Skills
Tooth Morphology
Oral Histology and Embryology
Preclinical Dental Assisting
Clinical Dental Assisting

FIGURE 2.0. ARTICULATED CURRICULUM MODEL

objectives common to expanded functions and dental hygiene. Content areas containing the remaining dental hygiene objectives are listed in the third level. (The competencies and objectives from each content area in these three levels can be found in the Dental Auxiliary Core Curriculum document available from the Council on Higher Education.)

This type of model may be useful in planning content sequencing changes to facilitate articulation. This particular model, and the "Ideal" Core Curriculum on which it is based, have been developed to show content overlap. Sequencing for articulation within a conceptual framework has not been done. This step is prerequisite to implementation.

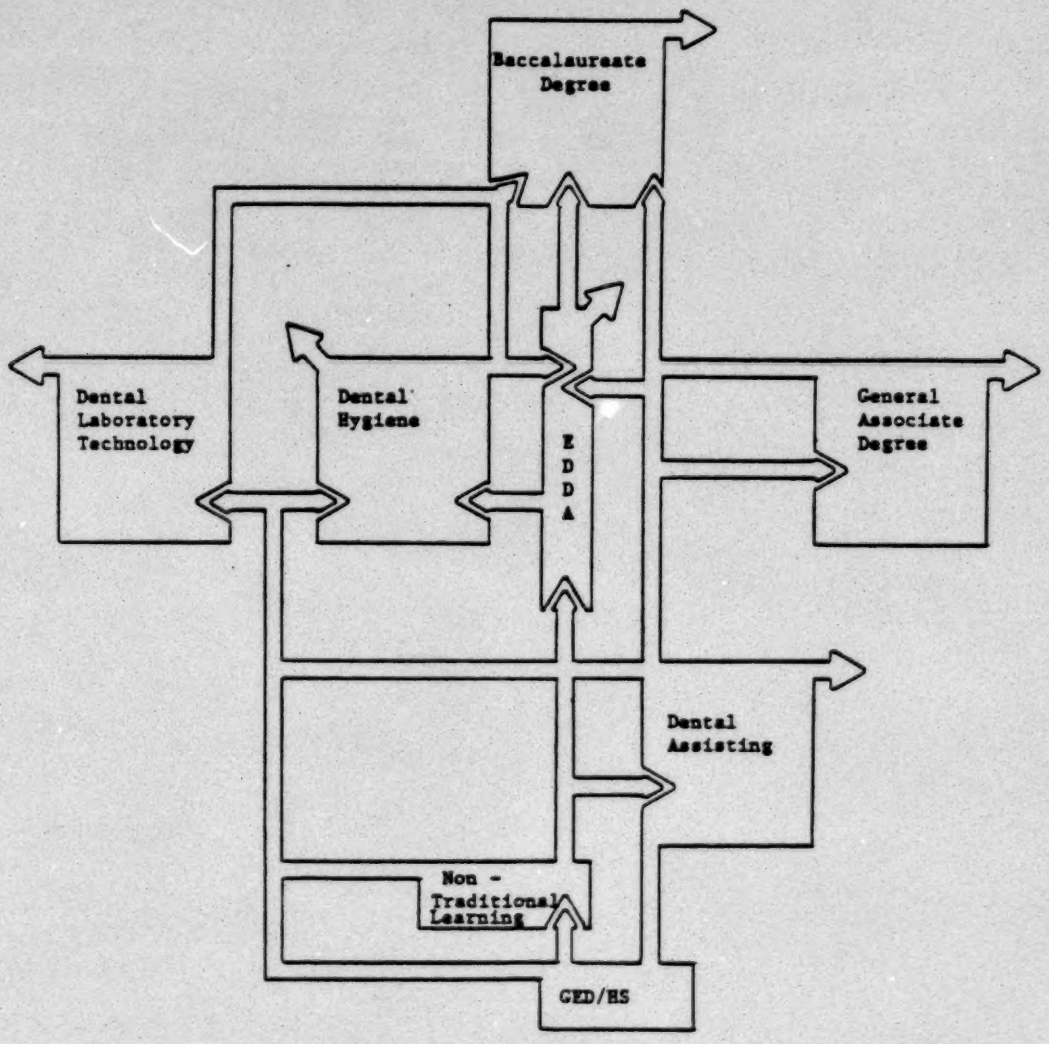
Articulation Model

The dental auxiliary career ladder proposed by the Dental Auxiliary DAG is illustrated in Figure 3.0. The ladder begins with high school graduation or its equivalent. Graduates may directly enter dental assisting, hygiene, or laboratory programs. (All discussions of program entry assume that basic admission requirements are met.) If nontraditional learning takes place prior to program admission, assessment mechanisms will be used to determine appropriate subject exemptions and advanced placement.

The dental assisting graduate has the greatest number of options in the model. He/she may take one of the following routes: a general associate degree program* (essentially the upper level of a 1 + 1) to a baccalaureate program, EDDA training to a baccalaureate program, EDDA training to advanced standing in a dental hygiene program, and a direct move to advanced standing in a laboratory technology or hygiene program. Exit points occur at every level in these routes.

---

*A general associate degree track for dental assistants does not currently exist, but is recommended by the dental auxiliary DAG.



GENERAL ARTICULATION MODEL
FOR DENTAL AUXILIARIES

FIGURE 3.0

Options for dental hygiene and laboratory technology graduates are more limited; however both may move directly into a baccalaureate program. An additional option for hygienists is to complete an EDDA program prior to a baccalaureate degree.

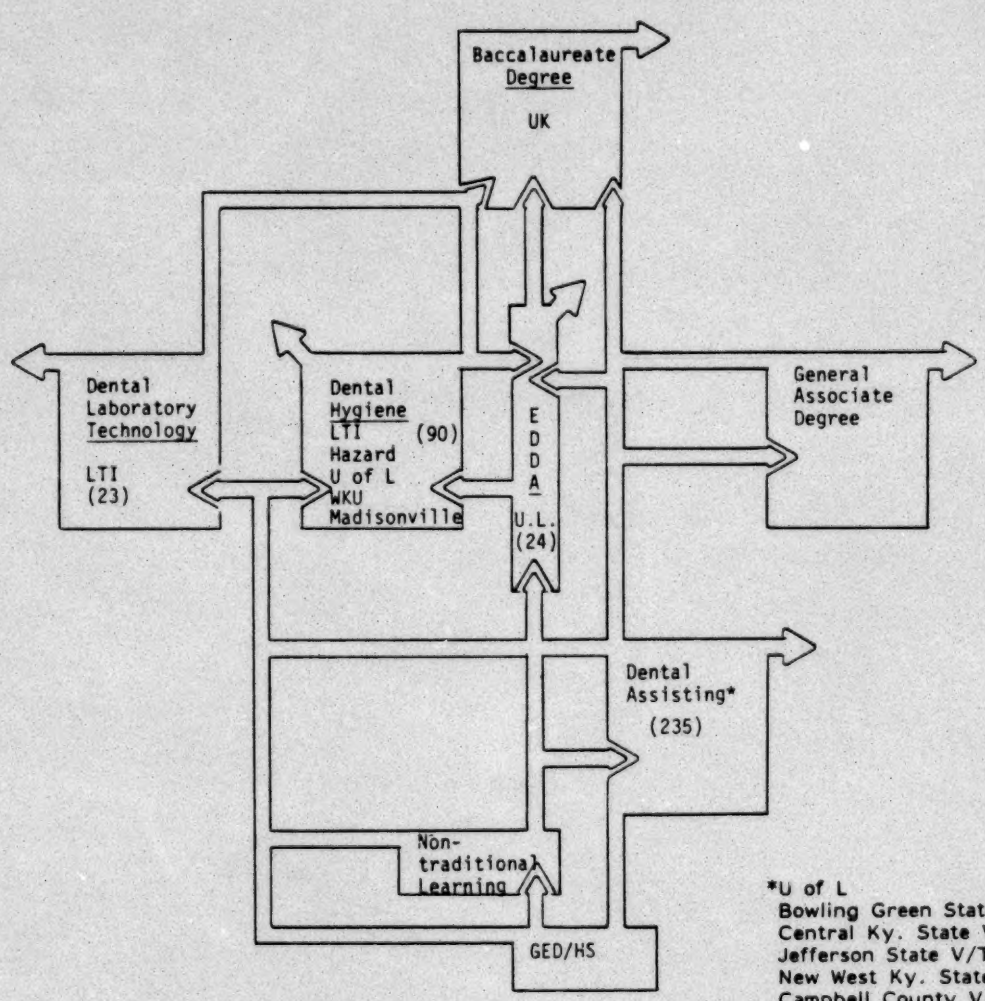
Of all Kentucky programs appropriate for dental auxiliaries at and beyond the baccalaureate level (e.g., education, health education) only one is included in the model. Unlike the others, it includes courses in dental auxiliary education and advanced clinical skills.

In Figure 4.0, the model includes the schools offering dental auxiliary programs and the approximate number of graduates per year. One school graduating dental assistants and laboratory technicians has not participated in KAHP and is not included in the model.

Systemwide Articulation Agreement

Working with selected discipline advisory group members, the University of Kentucky Community College System and the Vocational Education System negotiated a systemwide transfer agreement. The agreement specified the following:

- that credit be given for DHY 100 Oral Biology (5 credits), DHY 103 Dental Radiology (2 credits), and DHY 200 Oral Biology III (3 credits).
- that the final report be disseminated to the Community College System and Bureau of Vocational Education for their review, consideration and/or recommendations, and that appropriate action be taken by these units for implementation in June 1981.
- that implementation of the Articulation and Transfer Plan be effective June 1981.



( ) = Approximate No. of graduates/yr.

KENTUCKY DENTAL AUXILIARY PROGRAMS

FIGURE 4.0

Additional Dental Auxiliary Accomplishments

In addition to the completion of a systemwide transfer agreement and a core curriculum, the advisory group has completed the following:

1. Statewide Student Articulation Interest Survey. In an effort to more accurately determine student interest in furthering their education in articulated programs, dental auxiliary students were surveyed. Approximately 95 percent of the dental assisting and 100 percent of the EDDA students plan to continue their education. Over 50 percent expressed a preference to attend school part-time. The most frequent reason given for their preference was the need to work. A complete report is available titled "Dental Assisting and Expanded Functions Dental Auxiliary Articulation Interest Survey."
2. A Dental Auxiliary Education Brochure. In order to disseminate the results of the DAG's activities to students, a brochure was developed. It was designed to provide general information about dental auxiliary education, to distribute information about the systemwide transfer agreement and to assist faculty/counselors in student advisement.
3. Increased articulation between the University of Louisville's dental assisting and dental hygiene programs. The University of Louisville's dental assisting and hygiene programs have cored Dental Anatomy and Radiography courses and are considering coring Dental Materials and Expanded Functions courses.

Potential Future Transfer Agreements

The advisory group has identified the following as potential future transfer agreements:

1. An agreement between Western Kentucky University's dental hygiene program and the dental assisting program at Bowling Green State Vocational Technical School.
2. An agreement between Watterson College's dental assisting program and the University of Louisville's dental auxiliary programs.
3. An agreement between Jefferson State Vocational Technical School's dental assisting program and the University of Louisville's dental auxiliary programs.
4. Internal articulation between the University of Louisville's dental assisting program and their dental hygiene program.
5. A systemwide agreement between the dental assisting programs in the Vocational Education system and the Dental Laboratory Technology Program at Lexington Technical Institute.

RECOMMENDATIONS FOR IMPLEMENTATION

The goal of the Dental Auxiliary DAG is to develop an articulated statewide system of dental auxiliary education. In order to attain this goal, the Dental Auxiliary DAG recommends that THE COUNCIL ON HIGHER EDUCATION, OR SOME OTHER APPROPRIATE ORGANIZATION SUCH AS THE KENTUCKY CONSORTIUM FOR DENTAL AUXILIARY EDUCATION, COORDINATE THE STATEWIDE ARTICULATION ACTIVITIES AND SUPPORT THE DEVELOPMENT OF A GRANT PROPOSAL, OR OTHER MECHANISMS, TO FUND THESE ACTIVITIES.

The Dental Auxiliary DAG reviewed the recommendations from its Curriculum, Admissions, and Transfer Reports and developed procedural

recommendations for each. The individual recommendations are not in any particular order. The degree to which programs have begun to implement each recommendation is explained in the discussion sections.

Recommendation No. 1

DEVELOP ARTICULATION AGREEMENTS BETWEEN PROGRAMS.

Procedural Recommendations

Program faculty should determine advantageous articulation patterns and initiate meetings between the identified programs. Faculty need to determine comparable courses, responsibilities and rights of each program, and student eligibility guidelines. The articulation agreements must then be submitted to the appropriate bodies for review and approval.

Discussion

Representatives from the three community college dental hygiene programs and the five vocational dental assisting programs have developed an agreement allowing vocational graduates (upon meeting specified criteria) to be exempt from three of the community college dental hygiene courses. These transfer students will be granted ten credits for the courses. In addition, meetings will be held by Western Kentucky University's dental hygiene program with the dental assisting program at Bowling Green State Vocational/Technical School to determine transfer possibilities. The University of Louisville's dental assisting and hygiene programs have cored Dental Anatomy and Radiography courses and are considering coring Dental Materials and Expanded Functions courses.

Other advantageous articulation patterns need to be identified. Plans for

periodic review and revision of agreements also should be outlined.

Recommendation No. 2

ESTABLISH STANDARDIZED MINIMUM LEVELS OF ACHIEVEMENT FOR EACH MODULE OF INSTRUCTION WITHIN PROGRAMS.

Procedural Recommendations

Faculty should review current required competency levels, recommend appropriate changes, reach consensus on standard minimum levels, and implement necessary program changes.

Discussion

Information on currently required course competency levels is contained in the DAG Curriculum Report. This information needs to be expanded to competency levels required for each module of instruction. Institutional policy differences may create barriers to the adoption of standardized minimum levels of achievement.

Recommendation No. 3

DEVELOP GUIDELINES FOR THE IMPLEMENTATION OF A VARIETY OF COMPETENCY ASSESSMENT MECHANISMS INCLUDING STANDARDIZED CRITERIA FOR EACH MECHANISM.

Procedural Recommendations

Faculty will investigate existing guidelines for the use of competency assessment mechanisms, evaluate their applicability in Kentucky programs, and amend the guidelines, if needed, to meet faculty and student needs. Faculty will also reach consensus on the criteria to be used for each type of mechanism in order to standardize the evaluation of previous learning.

Discussion

The DAG has reviewed existing guidelines from one school for the use of the following types of assessment mechanisms: objective tests, performance tests, essay tests, interview assessment, situational assessment, product evaluation, and experiential learning portfolios.

Recommendation No. 4

DEVELOP STANDARDIZED ASSESSMENT MECHANISMS ACCORDING TO THE GUIDELINES ADDRESSED IN RECOMMENDATION 3.

Procedural Recommendations

Program faculty should reach consensus on competencies to be tested and the appropriate assessment mechanisms for those competencies. Existing mechanisms should be investigated. If appropriate for Kentucky programs, mechanisms may be adopted. If not, mechanisms should be jointly developed by discipline faculty.

Discussion

A few dental auxiliary programs, as well as other allied health programs in Kentucky, are currently using competency assessment mechanisms. Faculty with this experience will be able to provide valuable information regarding the development and use of the mechanisms.

Recommendation No. 5

ESTABLISH A TESTING CENTER FOR THE ADMINISTRATION OF THE STANDARDIZED ASSESSMENT MECHANISMS DEVELOPED ACCORDING TO THE ABOVE GUIDELINES BY DISCIPLINE FACULTY.

Procedural Recommendations

Centralized testing for the statewide articulation system would be ideal. Faculty should investigate existing centralized testing agencies. Additional funding would be required to carry out testing responsibilities. The number of potential students and the amount of time needed to counsel students and administer tests would need to be determined.

Discussion

Limited financial resources may prevent the establishment of a testing center.

Recommendation No. 6

ESTABLISH EITHER:

A. A SYSTEM OF CREDIT HOURS (OR COMPARABLE SYSTEM) FOR THE STATE VOCATIONAL/TECHNICAL SCHOOLS OR

B. A MECHANISM FOR VOCATIONAL/TECHNICAL DENTAL ASSISTING GRADUATES TO BE GRANTED ADVANCED PLACEMENT IN DENTAL AUXILIARY AND/OR LABORATORY TECHNOLOGY PROGRAMS AT OTHER SCHOOLS.

Procedural Recommendations

Option "A" can only be accomplished through vocational/technical system administrative action. Option "B" can be achieved through transfer agreements and/or the use of standardized assessment mechanisms.

Discussion

A transfer agreement has been developed between the community college dental hygiene programs and the vocational dental assisting programs. The dental hygiene program at Western Kentucky University plans to hold meetings with faculty from one vocational program to investigate transfer options.

Recommendation No. 7

DEVELOP MECHANISMS TO FACILITATE ADDITIONAL ACADEMIC ACHIEVEMENT FOR DENTAL ASSISTANTS.

Procedural Recommendations

The development of an associate degree track (upper level of a 1 + 1)

for dental assistants requires administrative involvement at interested institutions.

Discussion

One institution is currently considering an associate degree track for dental assistants. Faculty at other institutions might discuss the possibility with the appropriate administrators.

Recommendation No. 8

ELIMINATE DIFFERENCES IN THE TERMINAL DEGREE TITLES AWARDED BY PROGRAMS OFFERING SIMILAR COURSES OF STUDY, i.e. CERTIFICATES AND DIPLOMAS; CERTIFICATES AND ASSOCIATE DEGREES.

Procedural Recommendations

Program faculty should investigate terminal degree title policies at their institutions and the extent of programmatic autonomy in this area. Decisions can then be made regarding appropriate degree titles for each level of dental auxiliary education.

Discussion

The University of Louisville has changed the terminal degree title for dental hygiene from a certificate to an associate degree. This has standardized terminal degree titles for all dental hygiene programs in the state. Dental assisting faculty have investigated institutional and program policies regarding terminal degree titles and plan to discuss their findings at a future date.

Recommendation No. 9

NOTIFY GUIDANCE COUNSELORS AND PROSPECTIVE STUDENTS VIA COLLEGE BULLETINS, TRANSFER GUIDES, AND/OR INSTITUTIONAL STUDENT INFORMATION PAMPHLETS OF MECHANISMS AVAILABLE FOR OBTAINING CREDIT AND ADVANCED PLACEMENT FOR PREVIOUS EDUCATION AND EXPERIENCE.

Procedural Recommendations

Faculty should determine the most effective format for articulation information. Once compiled, the information should be distributed by programs. The information will need to be reviewed and updated on a regular basis.

Discussion

A brochure discussing articulation options for dental auxiliaries in Kentucky has been developed. The brochures have been sent to dental auxiliary programs and high school students and counselors.

Recommendation No. 10

IDENTIFY TEACHING METHODOLOGIES MOST APPROPRIATE FOR THE MIX OF TRADITIONAL AND ARTICULATING STUDENTS.

Procedural Recommendations

Sets of learning strategies that will best match the interests, needs, and aptitudes of traditional and articulating students need to be identified by faculty. Criteria can then be established for choosing appropriate learning strategies to accommodate articulating students.

Discussion

This recommendation will be implemented after faculty are able to assess the needs and performance of articulating students.

Recommendation No. 11

INVESTIGATE THE NEED FOR AND FEASIBILITY OF REMEDIAL OR TRANSITIONAL COURSES FOR ARTICULATING STUDENTS.

Procedural Recommendations

Program faculty should monitor and evaluate the performance of articulating students and assess their academic needs. Determining the feasibility of remedial or transitional courses requires the assessment of program resources.

Discussion

The expanded functions program at the University of Louisville assessed the needs of articulating students. Remediation is provided through self-paced modules, seminars, and independent study in laboratory and clinical areas. The community college system has established a committee to develop assessment mechanisms which will determine the need for remedial or transitional courses.

Recommendation No. 12

IDENTIFY THE APPROPRIATE NUMBER OF CONTACT HOURS FOR EACH CONTENT AREA BASED ON TEACHING METHODOLOGIES/LEARNING STRATEGIES, ACCREDITATION STANDARDS, ETC.

Procedural Recommendations

Using identified competencies as a base, faculty will compare current contact hours for each content area, discuss reasons for differences, and reach consensus on the minimum number of contact hours needed for students to attain competencies.

Discussion

Preliminary information on the number of contact hours per content area was collected from Kentucky dental auxiliary programs and was included in the DAG Curriculum Report. Since that time, contact hours were included for each module in the "ideal" core curriculum.

Recommendation No. 13

STANDARDIZE COURSE TITLES.

Procedural Recommendations

Program faculty should reach consensus on content and sequencing changes to determine appropriate standardized course titles.

Discussion

The DAG has collected information on current course titles in all programs. This information may provide faculty with a base from which to choose or develop standardized course titles.

Recommendation No. 14

MODEL CURRICULAR CHANGES AFTER THE "IDEAL" CORE CURRICULUM.

Procedural Recommendations

Faculty at each program will initiate curricular change at their respective institutions in accordance with institutional policy. Resources needed to accomplish the changes need to be identified.

Discussion

The dental assisting and dental hygiene programs at the University of Louisville have implemented parts of the core curriculum.

Recommendation No. 15

CONTINUE TO INVESTIGATE VALID PREDICTORS OF SUCCESS FOR DENTAL AUXILIARY AND DENTAL LABORATORY TECHNOLOGY PROGRAMS.

Procedural Recommendations

Program faculty should periodically review the literature and conduct research to determine valid predictors of success.

Discussion

Faculty have conducted research and reviewed current literature on valid predictors of success for dental auxiliaries. DAG members feel the research and literature leave many unanswered questions that must be addressed prior to altering admission criteria.

Recommendation No. 16

DEVELOP MECHANISMS FOR EVALUATING AND REVISING THE DENTAL AUXILIARY ARTICULATION SYSTEM.

Procedural Recommendations

Program faculty should determine which system components require evaluation, how information is to be collected, and what evaluation criteria will be used. Guidelines for the revision process will also need to be developed.

Discussion

Evaluation and revision of the articulation system have not been addressed by the DAG to date. Mechanisms for accomplishing evaluation and revision are critical if the system is to be responsive to the changing needs of students, faculty, administrators, and practitioners.

SUMMARY AND IMPLICATIONS

The Dental Auxiliary Discipline Advisory Group, as a result of the Transfer, Curriculum, and Admission Report findings, based the Dental Auxiliary Articulation Model on a core curriculum. This core curriculum identified overlapping competencies among and between the four types of auxiliary programs. The articulation model reflects this overlap by indicating advanced placement for students transferring into higher level programs. Advanced placement for students having non-traditional learning is also displayed.

In order to achieve statewide career mobility with minimal repetition of previously acquired competencies, the DAG recommends that THE COUNCIL

ON HIGHER EDUCATION, OR SOME OTHER APPROPRIATE ORGANIZATION SUCH AS THE KENTUCKY CONSORTIUM FOR DENTAL AUXILIARY EDUCATION, COORDINATE THE STATEWIDE ARTICULATION ACTIVITIES AND SUPPORT THE DEVELOPMENT OF A GRANT PROPOSAL, OR OTHER MECHANISMS, TO FUND THESE ACTIVITIES.

The primary recommendations from the Curriculum, Transfer, and Admission Subcommittee reports are listed below.

1. DEVELOP ARTICULATION AGREEMENTS BETWEEN PROGRAMS.
2. ESTABLISH STANDARDIZED MINIMUM LEVELS OF ACHIEVEMENT FOR EACH MODULE OF INSTRUCTION WITHIN PROGRAMS.
3. DEVELOP GUIDELINES FOR THE IMPLEMENTATION OF A VARIETY OF COMPETENCY ASSESSMENT MECHANISMS INCLUDING STANDARDIZED CRITERIA FOR EACH MECHANISM.
4. DEVELOP STANDARDIZED ASSESSMENT MECHANISMS ACCORDING TO THE GUIDELINES ADDRESSED IN RECOMMENDATION 3.
5. ESTABLISH A TESTING CENTER FOR THE ADMINISTRATION OF THE STANDARDIZED ASSESSMENT MECHANISMS DEVELOPED ACCORDING TO THE ABOVE GUIDELINES BY DISCIPLINE FACULTY.
6. ESTABLISH EITHER:
   A. A SYSTEM OF CREDIT HOURS (OR COMPARABLE SYSTEM) FOR THE STATE VOCATIONAL/TECHNICAL SCHOOLS OR
   B. A MECHANISM FOR VOCATIONAL/TECHNICAL DENTAL ASSISTING GRADUATES TO BE GRANTED ADVANCED PLACEMENT IN DENTAL AUXILIARY AND/OR LABORATORY TECHNOLOGY PROGRAMS AT OTHER SCHOOLS.

7. DEVELOP MECHANISMS TO FACILITATE ADDITIONAL ACADEMIC ACHIEVEMENT FOR DENTAL ASSISTANTS.
8. ELIMINATE DIFFERENCES IN THE TERMINAL DEGREE TITLES AWARDED BY PROGRAMS OFFERING SIMILAR COURSES OF STUDY, i.e. CERTIFICATES AND DIPLOMAS; CERTIFICATES AND ASSOCIATE DEGREES.
9. NOTIFY GUIDANCE COUNSELORS AND PROSPECTIVE STUDENTS VIA COLLEGE BULLETINS, TRANSFER GUIDES, AND/OR INSTITUTIONAL STUDENT INFORMATION PAMPHLETS OF MECHANISMS AVAILABLE FOR OBTAINING CREDIT AND ADVANCED PLACEMENT FOR PREVIOUS EDUCATION AND EXPERIENCE.
10. IDENTIFY TEACHING METHODOLOGIES MOST APPROPRIATE FOR THE MIX OF TRADITIONAL AND ARTICULATING STUDENTS.
11. INVESTIGATE THE NEED FOR AND FEASIBILITY OF REMEDIAL OR TRANSITIONAL COURSES FOR ARTICULATING STUDENTS.
12. IDENTIFY THE APPROPRIATE NUMBER OF CONTACT HOURS FOR EACH CONTENT AREA BASED ON TEACHING METHODOLOGIES/ LEARNING STRATEGIES, ACCREDITATION STANDARDS, ETC.
13. STANDARDIZE COURSE TITLES.
14. MODEL CURRICULAR CHANGES AFTER THE "IDEAL" CORE CURRICULUM.
15. CONTINUE TO INVESTIGATE VALID PREDICTORS OF SUCCESS FOR DENTAL AUXILIARY AND DENTAL LABORATORY TECHNOLOGY PROGRAMS.
16. DEVELOP MECHANISMS FOR EVALUATING AND REVISING THE DENTAL AUXILIARY ARTICULATION SYSTEM.

When implemented, these recommendations will have far-reaching implications

for dental auxiliaries and dental auxiliary education in Kentucky. Formally trained auxiliaries and those with nontraditional experience will be able to achieve vertical career mobility much more easily than in the past. Transfer agreements will maximize the amount of credit awarded for previous education. Previous nontraditional learning will translate into credit hours through successful performance on standardized assessment mechanisms. As dental auxiliary educators model content and sequencing changes after the "Ideal" Core Curriculum, programs, students and practitioners will realize maximum benefits from articulation.

These steps will stimulate interest in, and reduce the cost and amount of time currently required to attain vertical career mobility. As barriers to mobility are minimized, increased numbers of auxiliaries may pursue career advancement, and have the effect of enlarging program applicant pools.

Continuing communication among dental auxiliary faculty will be crucial to the success of the articulation system. Group decision making requires the sharing of information, experiences, and resources. This interaction has been an enriching activity for participating faculty. Future interaction will be facilitated if the responsibility for coordinating articulation activities remains with the Council on Higher Education, or is transferred to some other appropriate organization, such as the Kentucky Consortium for Dental Auxiliary Education.

From a state-wide perspective, implementing the articulation recommendations will result in reduced duplication, increased program cost-effectiveness, and expanded career options for Kentucky citizens.

APPENDIX A

Planning and Evaluation with PERT

Planning and Evaluation with PERT

Introduction

Planning and evaluation have been distinct challenges to persons writing proposals or implementing projects. One method for managing these challenges is the Program Evaluation and Review Technique (PERT).

PERT forced the identification of project activities that were necessary to reach the project goal and permitted evaluation of progress toward the goal. For example, when KAHP activities for the first year were planned and subjected to PERT, it was evident that failure to complete the activities in the amount of time prescribed was likely. A 68 percent probability of completing the first year activities was calculated.

Alternative solutions to the problem, as identified by PERT, were discussed by Council staff. Adjustments were made and the probability of completing the activities was elevated to 72 percent; however, the success of the project remained in doubt. Further adjustments were made and the probability of completing the first year activities increased to 95 percent.

Planning KAHP Activities

Project activities were identified and a Gantt chart was developed that depicted the activities of KAHP. Although the activities were identified and placed within time frames, the interrelationships among the activities were difficult to identify. Therefore, a "network" of activities was developed for the project. The network illustrated activities which were dependent upon other activities and activities which paralleled one another.

Three completion times, expressed in working day units, for each activity were estimated by Council staff: (a) most optimistic, (m) most likely, and (b) most pessimistic. A mean estimated time was then calculated for each of the three estimates per activity using the following formula:

$$T_E = \frac{a + 4(m)+b}{6}$$

The variance of the three mean time estimates per activity was calculated as follows:

$$V^2 = \frac{(b-a)^2}{6}$$

The critical path was the path requiring the largest amount of completion time. If sufficient amounts of time and resources were not available to complete the critical path, the success of the project was doubtful.

Several paths through the network were possible. The estimated times (T_E) for activities in each possible path were summed and a critical path (CP) was identified. The other paths were considered alternate paths.

Three methods to increase the probability of completing the activities were available:

1. Increase the time available to complete the project (TL).

2. Identify time and resources available in parallel activities that may be applied to critical path activities; thus, reducing the total time estimate for the critical path.

3. Plan to complete selected activities along the critical path in less time than estimated (i.e. reduce the estimated time).

During the project, Council staff applied the second method. The estimated time for an alternate path was subtracted from the estimated time of the critical path. The difference was "slack time" and "slack resources;" those resources were applied to another activity in the critical path; thus, the total estimated time for the critical path was reduced.

The adjustment increased the probability of completing first-year the activities 4 percent; however, the chance of success needed to be improved, if possible. The length of the critical path was further reduced by using the third method of increasing probabilities.

By planning to concentrate several Council staffs' efforts and by incorporating materials prepared throughout the initial months of the project, the estimated time was reduced.

The probability of completion was recalculated after shortening the critical path. By reallocating personnel and resources in an alternate path and by shortening the critical path estimated time, the probability of completing the first year activities, for example, was raised from 68 percent to 95 percent. Council staff were more confident that a successful project was possible. The technique was applied throughout the project.

Evaluating KAHP Activities

A process for evaluating the degree to which the specific project objectives and the project goal were reached was developed by utilizing the inherent capability of PERT, i.e. an evaluation procedure. Although the PERT evaluation procedure can be utilized at the conclusion of a project, staff decided to use a portion of the procedure periodically, as activities along the critical path were completed. Thus, continual monitoring of the project's status permitted identification of potential future trouble spots. The evaluation procedures were used for KAHP DAG, TAG, and Task Force objectives at the conclusion of year one and during the beginning of year three.

A formative interim evaluation of advisory groups' attitudes and accomplishments was requested by Dr. Elizabeth King, Associate Director for Allied Health Education and KAHP Director, in November, 1980. The results were used to help: 1) identify specific advisory groups' activities/ issues which needed attention, 2) plan the KAHP final year activities, and 3) identify activities which may continue beyond the funding cycle of KAHP.

Two evaluation designs were the foundations of all measurements. Attitudinal measurements were collected each time an advisory group met. The degrees to which advisory groups' activities were met were measured at the end of year one and during October-December, 1980 in the final year of KAHP.

Periodic evaluations of attitudes provided on-going feedback about each meeting to the KAHP staff and advisory groups. The instrument was administered at the conclusion of each meeting.

Output measures were: 1) the degree to which each advisory group's activities were accomplished, and 2) the advisory groups' attitudes. The groups' activities addressed the project's goals; attitudes were measured to assess the "climate" of the KAHP. Appendices are instruments used to collect data. The instruments were developed by the KAHP advisory groups and staff.

The schedule for attitude data collection paralleled DAG, TAG, and Task Force meeting dates (monthly). The instruments were administered by the KAHP staff at the conclusion of each meeting; each advisory group member completed an instrument. Interim activity evaluation instruments were administered in FALL, 1980 by KAHP staff at the regularly scheduled meeting or through the mail.

System Maintenance

At the conclusion of year three, staff identified activities which were necessary for the maintenance of A Statewide System for Allied Health Education. The PERT planning process was applied: (1) activities were identified, (2) a Gantt chart was constructed, (3) a network of activities was constructed, and (4) the times were estimated.

The probability of completing the activities can be calculated when the allowed completion time is determined. During system implementation, feedback from PERT evaluation procedures will provide formative evaluation data to the Council.

APPENDIX B

Dental Auxiliary Program Inventory

MAPS Indicating Location and Type of School

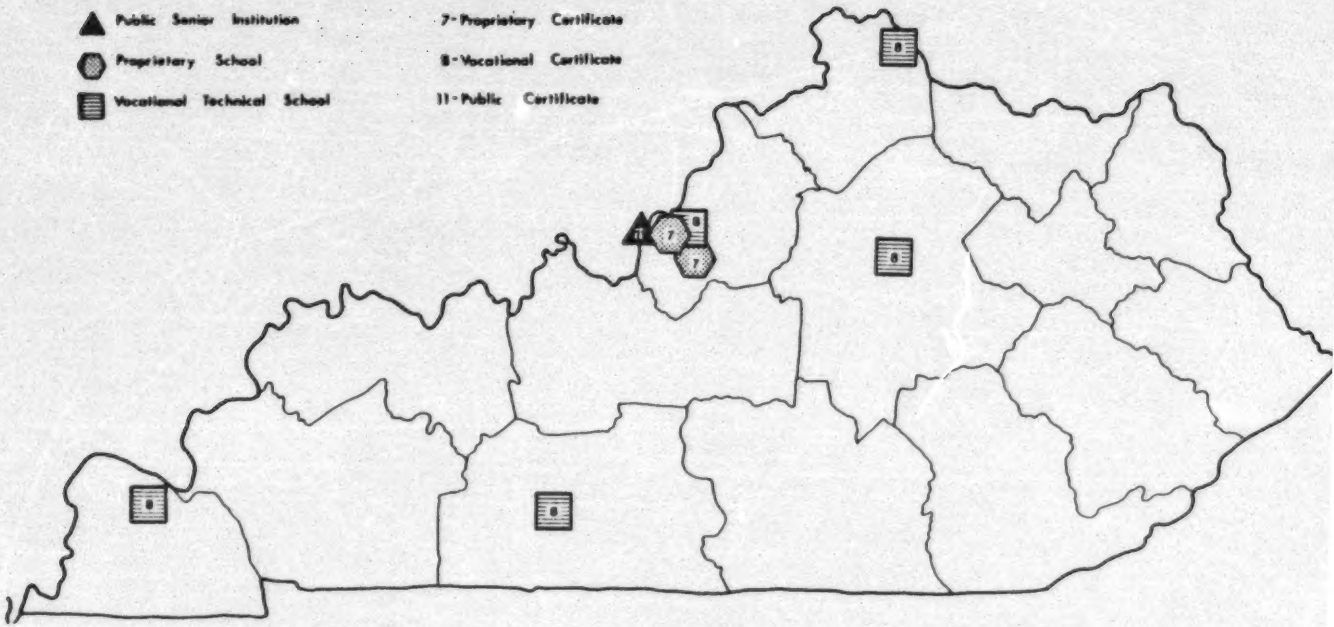
Offering Dental Auxiliary Programs

DENTAL AUXILIARY PROGRAM INVENTORY - KENTUCKY, 1982

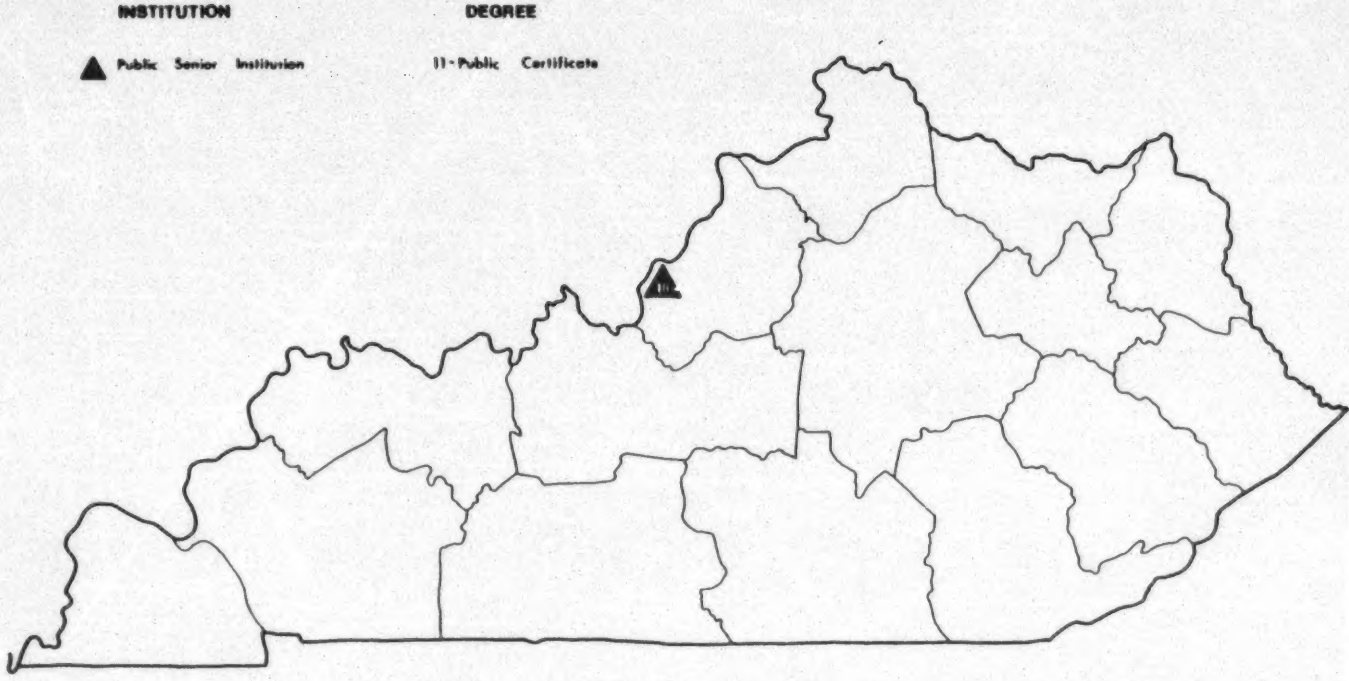
INSTITUTIONS	Dental Hygiene (AD)	Dental Laboratory Technology (AD)	Dental Assisting (C)	Expanded Functions (C)	Allied Health[2] (BS)
Public Senior Institutions					
University of Louisville	X		X	X	
Western Kentucky University	X				
University of Kentucky					X
Community Colleges					
Lexington Technical Institute	X	X			
Madisonville Community College	X[1]				
Hazard Community College	X[1]				
Vocational Education					
Jefferson State Vocational/Technical School			X		
Bowling Green State Vocational/Technical School			X		
Central Kentucky State Vocational/Technical School			X		
North Campbell County State Vocational/Technical School			X		
West Kentucky State Vocational/Technical School			X		
Proprietary					
Watterson College			X		
Louisville College of Medical and Dental Careers		X (Diploma)	X (Diploma)		
TOTAL	5	2	8	1	1

1 - These mobile programs are scheduled to move in 1984.
2 - Post-Professional Studies in Dental Auxiliary Education.

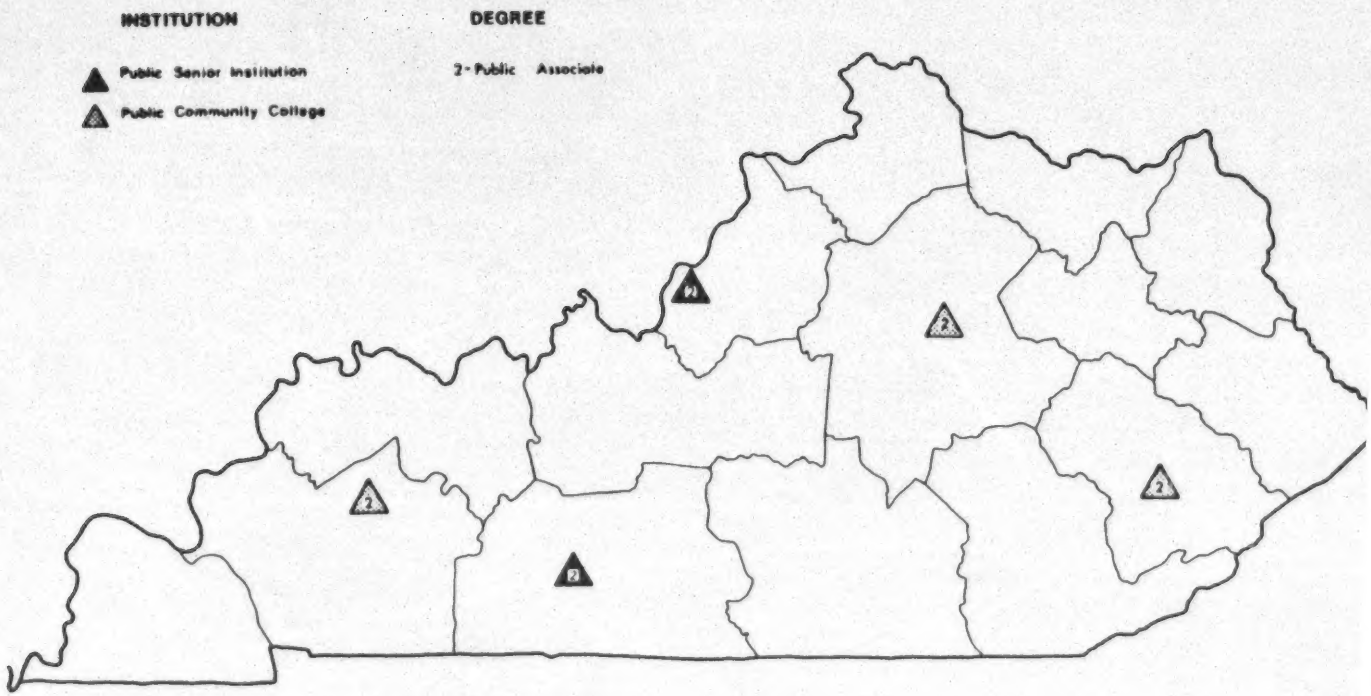
LOCATION AND TYPE OF SCHOOL OFFERING A PREPARATORY DEGREE IN DENTAL ASSISTING



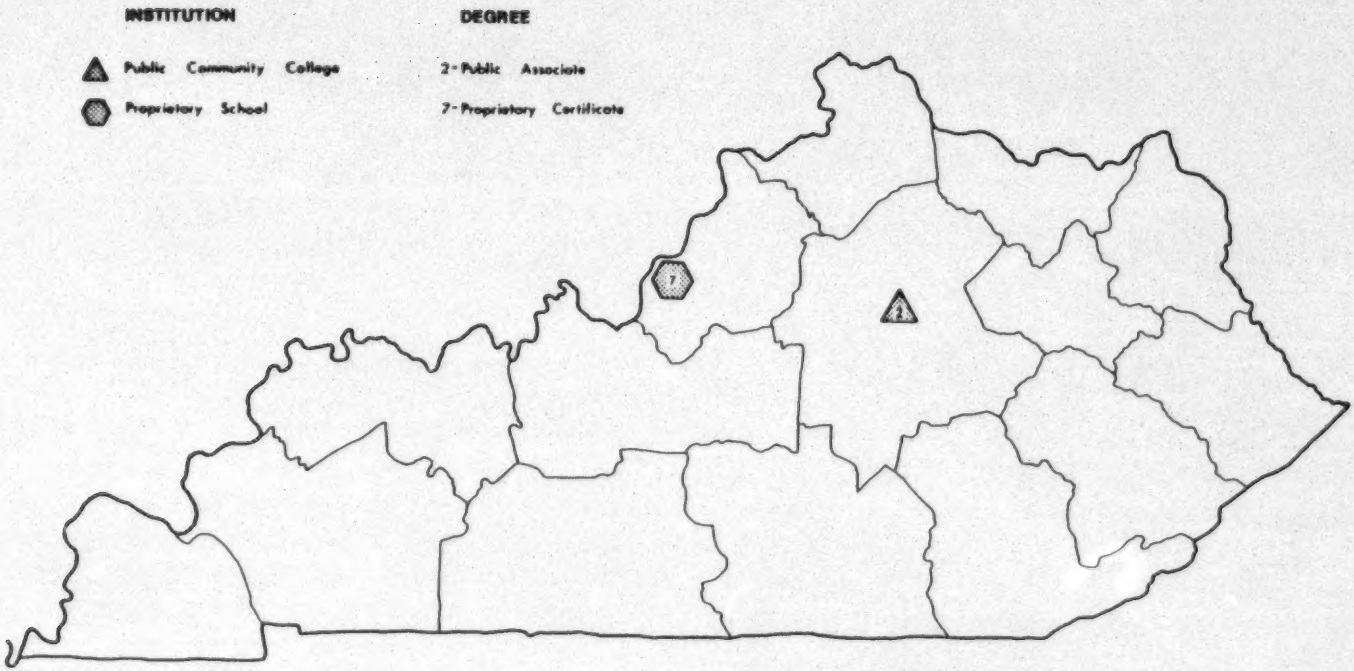
LOCATION AND TYPE OF SCHOOL OFFERING A PREPARATORY DEGREE IN EXPANDED DUTY DENTAL ASSISTING



LOCATION AND TYPE OF SCHOOL OFFERING A PREPARATORY DEGREE IN DENTAL HYGIENE



LOCATION AND TYPE OF SCHOOL OFFERING A PREPARATORY DEGREE IN DENTAL LABORATORY TECHNOLOGY



APPENDIX C

TRANSFER AGREEMENT

DENTAL ASSISTING/DENTAL HYGIENE ARTICULATION AND TRANSFER COMMITTEE REPORT

INTRODUCTION

The Dental Assisting/Dental Hygiene Committee was appointed in September, 1980. The Bureau of Vocational Education and the University of Kentucky Community College System each had three members on the Committee. Four members were Program Coordinators and two were administrative staff personnel with responsibilities for coordination of dental auxiliary programs. In addition, the Council on Higher Education staff member working with the Dental Auxiliary Discipline Advisory Group served as a consultant to the Committee.

The initial meeting of the Committee was held on October 7, 1980. During that session an overview of the articulation process, tasks to be performed, time frame for completion, and format for the Committee Report were reviewed. The deadline for completing this assignment and submitting the report was set for April 1, 1981.

Committee Charge and Limitations

The specific charge to the Committee was to develop a systematic articulated program structure which would lead to a means of granting credit for vocational courses toward degrees conferred by the University of Kentucky Community College System. Four tasks were identified as essential in developing a model articulation and transfer plan for Dental Assisting/Dental Hygiene Programs. These were as follows:

1. Obtain specific exit competencies for each course offered in the curricula of the programs under review. Attention should focus on the minimum exit level of performance required.

2. Review and compare all exit competency statements for similarities and/or differences in the nature and scope of content, level of difficulty in required performance and any prerequisite knowledge or skills involved.

3. Write a proposed model Articulation and Transfer plan for the Community College System and the State Vocational-Technical Schools.

4. Make recommendations for implementing the proposed Articulation and Transfer plan.

In addition, certain limitations were listed as areas not within the responsibility of the Committee. These are:

1. The Committee should not become involved in determing duplication of programs or courses or in the justification for programs or courses.

2. The Committee should not become involved in administrative details such as evaluating the effectiveness of specific programs or courses.

3. The Committee is not responsible for indentifying those State Vocational-Technical Schools which meet the Articulation and Transfer of credit agreement standards (exit competencies). This will be done by the Bureau of Vocational Education.

4. The Committee is to limit themselves to the development of program articulation and transfer of credit plan between the Community College System and the State Vocational-Technical Schools.

The report should be completed no later than April 1, 1981.

Procedures

In order to complete the four tasks assigned to the Committee, there was a review of pertinent information regarding the characteristics of the Dental Assisting and Dental Hygiene Programs. A review of both programs was conducted including philosophy, expectations of graduates, admission criteria/guidelines and curriculum (course descriptions, prerequisites, minimum level exit competencies, course outlines, specific skills, and evaluation practices). The Committee agreed to confine articulation efforts to the dental assisting/dental hygiene courses in the curricula, since special examinations are available for establishing credit in the general education courses.

A review of the fifteen dental hygiene courses was conducted in relation to commonalities and dissimilarities with the dental assisting curriculum. The investigation was done with concern for identification of course content and skill proficiency levels ("C" grade level equivalents as defined by individual and using stated criteria), which might be transferable to the Dental Hygiene Program. The sequence and content of courses in the dental assisting curriculum does not facilitate transfer/articulation by courses from dental assisting to the dental hygiene curriculum. Therefore, articulation would of necessity be based upon completion of the Dental Assisting Program.

Proposed Articulation and Transfer Plan

After careful review of the dental assisting and dental hygiene curricula, the Committee recommends that ten credit hours be awarded to graduates of the Kentucky Vocational Education Dental Assisting Programs having accreditation status as granted by the Commission on Dental Accreditation of the American Dental Association. Credit will be awarded

for DHY 100 Oral Biology I (5 credits), DHY 103 Dental Radiology (2 credits), and DHY 200 Oral Biology III (3 credits) courses after applicants have been admitted to the Dental Hygiene Program. It is the opinion of the Committee that due to role differences, the dental assisting curriculum does not include the theoretical background and skills to warrant the awarding of credit in the other dental hygiene courses.

The Committee recommends:

1. that credit be given for DHY 100 Oral Biology (5 credits), DHY 103 Dental Radiology (2 credits), and DHY 200 Oral Biology III (3 credits).

2. that the final report be disseminated to the Community College System and Bureau of Vocational Education for their review, consideration and/or recommendations, and that appropriate action be taken by these units for implementation in June 1981.

3. that implementation of the Articulation and Transfer Plan be effective June 1981.

4. that the Community College System and Bureau of Vocational Education give consideration to staff and faculty development, which will be required in order to implement this agreement.

5. that a mechanism, such as a committee comprised of representatives from both systems, be developed to incorporate into this Articulation and Transfer Plan any curriculum and/or instructional changes in the Community College System or the Bureau of Vocational Education which may affect this agreement.

6. that an ongoing evaluation plan be developed jointly between the Bureau of Vocational Education and the Community College System to assess the effectiveness and the viability of the Articulation and Transfer Plan.

7. that dental assisting graduates from Vocational Education programs meet the following eligibility requirements for articulating into the Community College System's Dental Hygiene programs:

   a. be a graduate of Kentucky Vocational Education programs having accreditation status as granted by the Commission on Dental Accreditation of the American Dental Association.

   b. be a Certified Dental Assistant.

8. that the Bureau of Vocational Education be responsible for verifying to the Community College System the competencies of those Dental Assistants who graduated more than three (3) years (June, 1978) from the date of implementation of the Articulation and Transfer Agreement.